PATIENT-BASED OUTCOMES: OLDER ADULTS' PERCEPTIONS OF HOSPITAL AND RECOVERY EXPERIENCES

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by

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Abstract

This descriptive-correlational prospective study was designed to investigate the hospital and recovery experiences of a sample of 430 patients[1] aged 55 years and older, admitted to medicine, surgery, cardiac care or women's health programs, in a recently restructured health system. The study investigated physical/mental health status during hospitalization and at two weeks post-discharge, and functional status at three days and two weeks post-discharge. Relationships between patient characteristics, illness-related variables, discharge planning and health/functional status were also explored. The conceptual framework for the study was based on the Medical Outcomes Study (MOS) framework (Tarlov et al., 1989).

Most patients were married (68.2%), retired (70.8%), had someone they could turn to for help (94.4%), were 65 years of age or older (63.8%), and had highschool or post-secondary education (56.4%). There were fairly equal numbers of males (49%) and females (51%). Data were collected between January and June, 1998.

The SF-12 Health Survey, Functional Autonomy Measurement System, Post-Hospital Questionnaire, Symptom Questionnaire, and Patient Information

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[1] The term 'patient' refers to client or consumer of health services.

Questionnaire were administered during face-to-face and telephone interviews. Study findings indicated that physical health ratings were lower than mental health status prior to and post-hospitalization. With regard to functional status, limitations were noted in mobility and instrumental activities of daily living (IADL) at both time periods. A significant improvement was observed in patients' mental health status, mobility, and IADL, whereas, physical health status evidenced a significant decline.

With regard to discharge planning indicators, most patients reported relatively high levels of understanding, confidence and satisfaction, but minimal or no participation in decision-making about care. Over 50% of patients did not receive recovery-related information, and over 75% did not receive information on community resources. Health-care providers over-estimated patients' understanding of health problems, participation in decision-making about care, confidence in resuming normal activities at discharge, and satisfaction with discharge arrangements.

Patient characteristics and illness-related variables influenced physical/mental health status at two weeks post-discharge. There was little association between discharge planning variables and health/functional status at two weeks post-discharge.

Regression analysis identified mental health status at two weeks as the most significant predictor of physical health, and physical health status at two weeks surfaced as the most significant predictor of mental health. Functional status indicators (ADL, IADL, communication and mobility) at three days post-discharge surfaced as the most significant predictors of their counterparts at two weeks post-discharge.

The factors affecting health and functional status are varied and complex, and require further investigation. Study findings suggest that medical/surgical patients admitted to acute-care settings are experiencing poorer physical health and improved mental health and functional status two weeks following discharge. Findings point to a need to improve provider-patient communication and to increase the opportunity for patient involvement in decision-making about care.

TABLE OF CONTENTS

Page

Page

LIST OF TABLES

Page

Page

LIST OF FIGURES

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CHAPTER 1

Introduction

Health care delivery systems across Canada and the U.S. are restructuring and downsizing. Rapid advances in health technology, changing demographic trends, and the high cost of traditional hospital care are contributing to a shift in health care delivery from hospital to community. Along with these changes, there is apprehension about the impact on patient care.

There are concerns that, as a result of restructuring, older hospitalized patients may be discharged "sicker and quicker" with the potential for decline in health status and hospital readmission (Bywaters, 1991; Clemens, 1995; Leibson et al., 1990; Wood & Estes, 1990). It has also been reported that many patients prefer to be treated and cared for at home rather than in institutional settings, since the home setting has the advantage of providing security and familiarity. Some researchers are convinced that optimal efficiency and quality of patient care is predicated on a shorter hospital stay in combination with ease of access to community-based services and supports (Canadian Study of Health and Aging, 1994; Clemen-Stone et al., 1995; Macmillan, 1994).

Background and Rationale

The restructuring of Canada's health care system has placed increased emphasis on regionalization, with a special focus on service provision and management at the local level (Brazil & Anderson, 1996; Rachlis & Kushner, 1992). Like those of other regions in Canada, the Newfoundland and Labrador health care system has encountered financial difficulties since the early 1980s which intensified in 1991-1992. For the last decade the system has endured budget restraints, salary freezes, decreased inpatient beds, staff layoffs, and restructured services. In early 1994 the provincial government initiated actions to enhance the efficiency and effectiveness of health care delivery by regionalizing all health care organizations under two levels of governance: regional institutional boards and regional community boards. In the St. John's region, this resulted in the creation of one institutional board from eight separate boards and institutions, and one community board.

The institutional board, formally created as the Health Care Corporation of St. John's (HCC), assumed authority April 1, 1995. Its eight facilities provide tertiary and secondary care, including acute care, rehabilitation, convalescent care, palliative care, mental health and limited long-term care to a region of 200,000 people. The annual operating budget

is approximately $295 million with a staff of 6,700 employees and 450 physicians (Health Care Corporation of St. John's, 1998).

In April of 1996, following a year of intense preparation, the HCC integrated clinical services under a patient-centered, program-based management system of care. Organizational structure, management control systems and delivery strategies were structured around major clinical services. The HCC's vision includes the delivery of comprehensive health care services, while ensuring continuity of care. It is committed to sustaining continuous quality improvement, and believes that program management will improve the ability to measure outcomes and identify the expectations of patients (Davis & Tilley, 1996).

Changes to health care are often viewed from the perspective of "what works" for patients, and "what benefits" patients receive from treatment, procedures and services delivered by health care providers. This study, which is part of a larger research project, was prompted by concerns about how patients understood and were dealing with the rapid changes that have taken place within the health care system in the St. John's region since 1994.

The St. John's project design was based on a study conducted by Rowe et al. (1997). The purpose of the St. John's project was to examine, from the perspectives of patients, their families, hospital and community health-care

providers and key informants, the hospital experience and follow-up of recently discharged patients aged 55 and older (Rowe et al., 1998). A second purpose was to identify factors that facilitate or hinder attainment of patients' optimal level of health and functional status. The current study focused on two of the five components of the larger project.

The purpose of this prospective, descriptive-correlational study was to investigate the perceived health (i.e., physical and mental) and functional status (i.e., activities of daily living, mobility, communication and instrumental activities of daily living) status of medical and surgical patients aged 55 and older at two different time periods (i.e., during hospitalization and post-discharge). A second purpose was to investigate patients' perceptions of their discharge planning experiences. Specifically, information was obtained from patients regarding their participation in decision-making about care, understanding of their health problems and the reasons for medical tests, confidence in their ability to resume normal activities at discharge, and satisfaction with discharge arrangements. Health providers' perceptions of patients' discharge planning experiences were also identified and compared with patients' reported experiences. A third purpose was to investigate the influence of patient characteristics, illness-related variables, and discharge planning indicators on perceived health and functional status at two weeks

following discharge from an acute care setting. A final purpose of the study was to investigate patients' satisfaction with their overall hospital experience.

This study of patient-based outcomes is important to social work in health care because it identifies the ways in which patients and hospital health providers view and understand the discharge planning process. Information gathered in this study is intended to help social workers improve their discharge planning practice with patients in a newly restructured health care environment. The study was designed to give patients and health-care providers an opportunity to express their views of the regional health care system, including the planning, organization, delivery, and outcomes of care. An increased understanding of health care outcomes contributes to our knowledge of the assistance that individuals need, are aware of, and rely on following hospitalization. Careful and effective monitoring of patient-based outcomes is necessary to ensure that underlying principles of the health care system are maintained and that improvements to health care delivery are made where necessary.

This research has the potential to impact the delivery of health care by identifying factors that facilitate positive outcomes for patients, and by clarifying social work roles in a new health care environment.

Statement of the Problem

Significant changes are occurring within the Canadian health care system in an effort to control costs. The impact of health care reform on patients is not clearly understood. It has been suggested that patients are dissatisfied with many aspects of health care, and some have expressed a preference for early hospital discharge and home-based care. The media has reported examples of patients' dissatisfaction with staffing levels, lack of continuity of care from hospital to community, lengthy waiting lists for specialized care, and shortened hospital stays without adequate and available community services. However, there is limited empirical information which reflects patients' perspectives on how they are coping with the changes. Research is needed to explore how patients are experiencing care in a newly restructured health system.

Research Questions

This study was designed to answer the following research questions:

1. How do medical/surgical patients aged 55 and older perceive their health status during hospitalization and at two weeks following discharge from an acute care setting?

2. How do patients aged 55 and older perceive their functional status and illness symptoms at three days and two weeks following discharge from an acute care setting?
3. Are there a significant changes in patients' perceived health status, functional status, and illness symptoms over time?
4. To what degree are patients' aged 55 and older, recently discharged from acute care settings, satisfied with their overall hospital experience?
5. How do patients perceive discharge planning (i.e., understanding of health problems and reasons for medical tests, participation in decision-making about care, confidence in resuming normal activities following discharge, and satisfaction with discharge arrangements) in acute care settings?
6. To what degree are health providers' perceptions of patients' discharge planning (i.e., understanding, participation, confidence and satisfaction) comparable to patients' perceptions of their own experiences?
7. What is the effect of patient characteristics (i.e., age, gender, marital status, income, education), illness-related variables, and discharge planning on health and functional status at two weeks post-discharge?

CHAPTER 2

Literature Review

For the purposes of this study, the review of literature is divided into three major sections. The first section reviews relevant research on discharge planning and its potential impact on health outcomes. Special consideration is given to patient participation in decision-making, information and understanding, and the role of health providers' in discharge planning. The second section presents an overview of research findings on the outcomes of health care (i.e., health, functional status and patient satisfaction). The final section presents a brief summary of the conceptual framework for the study.

Discharge Planning: Impact on Health Outcomes

Discharge planning is viewed by health care professionals and hospitals as the primary means to ensure that patients' needs will be met in the post-discharge environment (Mamon et al., 1992). The role of discharge planning in easing the transition of patients from one environment to another has been recognized for decades, and its benefits for continuity of care have been documented in numerous studies (Abramson, 1990; Allan & Penning, 1996; Anderson & Helms, 1995; Bubela et al., 1990; Haddock, 1991, 1994; Naylor et al., 1994). The need for discharge planning becomes more important

because of the rising number of elderly patients requiring post-hospital care, the lack of appropriate community resources, and the difficulties in accessing community services. Hospitals see a need to increase the effectiveness of discharge planning programs because of their importance in ensuring the quality of patient care, and their contribution to cost containment (Closs & Tierney, 1993).

Restructuring of the health care system has engendered substantial fear that changes will have a deleterious effect on the quality of care provided to patients. Individuals generally leave the hospital at a lower level of functioning than before hospitalization, and often require assistance with medical treatment and activities of daily living (Kahn, Keeler et al., 1990, Kahn, Rubenstein, et al., 1990; Kosecoff et al., 1990; Morrow-Howell, Proctor, & Mui, 1991; Proctor, Morrow-Hall, & Kaplan, 1996). Of particular concern are those identified as being at highest risk: patients suffering from chronic illnesses, those living in poverty, and the growing numbers of elderly (Proctor et al., 1992; Rowe et al., 1997; Ware et al., 1996). Discharge planning has a direct impact on the quality of care because patients who have complex medical, social, and financial problems are being discharged from acute care settings requiring more intensive services outside the hospital. Discharge planning is seen as the key to ensuring that community services such as home

health care and support are provided as patients return home (Bubela et al., 1990; Feather, 1993; Proctor et al., 1992; Simmons, 1986).

Previous research on discharge planning has focused on structural or hospital-related outcomes of discharge planning. These studies have attempted to determine the relationship of certain hospital and patient variables to poor communication between hospital and community (Armitage, 1981), lack of assessment and planning for discharge (Harding & Modell, 1989), and inadequate notice of discharge (Harding & Modell, 1989; Victor & Vetter, 1985). In a descriptive correlational study designed to examine discharge planning programs for characteristics associated with positive outcomes, Haddock (1991) found that more highly formalized discharge planning program structures were associated with increased levels of satisfaction for elderly patients.

Other studies have attempted to identify outcomes associated with effectiveness of the process of care. Length of hospital stay (Edwards et al., 1991; Farren, 1991; Kennedy, Neidlinger, & Scroggins, 1987; Naylor, 1990), and readmission rates (Trella, 1991; Naylor, 1990) have been used as organizational indicators of effective discharge planning. Recent studies have concentrated on patient-based outcomes of discharge planning, such as

placement status, functional levels, knowledge acquisition, and satisfaction (Charles et al., 1994; Cleary et al., 1991; Haddock, 1991; Rowe et al., 1997).

Five aspects of discharge planning have significance to the present study: the extent to which patients participate in decision-making about care, patients' knowledge and understanding and confidence at discharge, as well as the role of health-care providers' perceptions in the discharge planning process. The research literature on these aspects of discharge planning is reviewed in the next three sections of this chapter.

Participation

With the shift to program management and patient-centered care, the concept of patient participation has been growing in popularity and is becoming a widely accepted tenet in contemporary health care practice. It has been heralded as a means of enhancing decision-making and human dignity, and enriching quality of life (Brearley, 1990; Clayton, 1988; Cleary et al., 1991). Promotion of patient participation comes from the belief that patients have a right and a responsibility to be involved in their health care (World Health Organization, 1948). There is growing recognition that patients' values, preferences and lifestyles ought to be incorporated into decision-making when assessing the merits of various treatment alternatives for specific

health problems. This approach recognizes that, even though there is a strong technical component to decision-making in the selection of treatment choices, the patient is in the best position to place a value on the consequences of various treatments (Cleary & McNeil, 1988; Williams, 1998). This is not to say that all health care professionals promote participation by patients; some professionals still take a prescriptive and paternalistic stance toward patients which minimizes their involvement in making decisions.

A growing body of research suggests that patient involvement in care is associated with better health status. In a series of intervention studies, investigators have consistently shown that efforts to increase patients' ability to become involved in their care can lead to better clinical and health status outcomes (Greenfield, Kaplan, & Ware 1988; Kaplan & Ware, 1989). It has also been suggested that better adherence to treatment regimes (Macleod & Latter, 1990), greater patient satisfaction (Manthey, 1980), decreased discomfort, shorter lengths of hospital stay, and a more rapid return to work (Heymann, 1997) are positive outcomes of patient participation. Coulton, Dunkle and Goode (1982), in an exploratory study of the involvement of the elderly in making decisions about long-term care, found that the level of patients' satisfaction with their plan at the time of discharge ranged from fair to excellent for those who were fully or partially involved in decision-making.

By contrast, the majority of those who had minimal involvement in decision-making were categorized as dissatisfied with their plan. Additional research on patient involvement in planning by Coulton, Dunkle and Chow (1988), suggests an association between participation in decisions and enhanced physical and mental health. A more recent study on discharge planning organization and outcomes found that patients who participated in treatment decisions and discharge planning had higher levels of understanding and satisfaction with their hospital experiences than those who did not participate (Rowe et al., 1997).

Biley (1989) reported that patient participation is influenced by the organizational structure, the amount of knowledge patients have, and the patient's desire to participate in care. Using a grounded theory approach, Waterworth & Luker (1990) examined patients' (N=12) perceptions of their involvement in decisions concerning their treatment and nursing care. One major theme that emerged from the data was named "toeing the line" which suggested that some patients were more concerned about pleasing health care providers than participating in decisions concerning care. Armitage (1981) suggested that such reluctance may be because patients fear being seen as difficult or troublesome. According to Muetzel (1988), some patients derive security from passivity and adopt a "nurse or doctor knows best" stance.

Jewell (1996), in a qualitative study of elderly patients' participation in discharge decision-making (N=5), found that patients had little understanding of the term participation. During individual interviews patients were unable to provide any theoretical understanding of participation when asked what it meant to them. Patients were mainly concerned with being given information and reported having unmet information needs. They felt they had a role in discharge decision-making but were unable to fulfill it due to a lack of information. Consequently they relied upon nursing staff to take the lead in the decision-making process.

In a study which examined the relationship between preferences for decisional control and illness information among women with breast cancer, Hack, Degner & Dyck (1994) found a statistically significant relationship between patients' preferences for involvement in treatment decision-making and preferences for illness-and treatment-related information. These findings suggest that understanding patients' role preferences can assist health professionals in the provision of information to patients and underlines the importance of all health care providers to be sensitive to, and respect, the role preferences (i.e., active or passive) of patients and the amount of information they want to receive.

Brearley (1990) viewed participation as a collaborative process which involves the empowerment of patients. In a review of research literature spanning a ten year period, she concluded that patients preferred being given information to having an explicit role in decision-making. Information giving, she suggested, is important in the preparation for participation, and patients require, and generally prefer, accurate, relevant and sensitively provided information. Brearley argued that, even in situations of patient passivity, information is vital to enhance feelings of self-control. Patients need to be regarded as being capable of making suggestions and capable of being involved in decision-making. Assessment of an individual's ability and desire to take part in decision-making about his or her discharge plan is viewed as critical.

There is a dearth of empirical work examining patients' perspectives on outcomes of participation in discharge planning. Elderly patients are particularly vulnerable to being overlooked in decision-making, because they are often viewed by both themselves and health professionals as having limited ability to make sound decisions.

Information and Understanding

While it is believed that effective transfer of information to patients is critical for successful discharge from hospital, few studies have measured patient-based reports of information received about their condition and recovery at home (Van Veenendaal, Grinspun, & Adriaane,1996). In a health care context, augmented sources of medical information can enhance patients' knowledge about their situation and consequently contribute to quality of life and better physical comfort during recovery at home (Reiley et al., 1996). During hospitalization and in preparation for discharge, patients and their families must have sufficient information to ensure that it is possible to meet post-hospitalization needs. In Quebec, for example, legislation states that every individual is entitled to receive information about health and social service resources available in the community, as well as information about conditions governing access to such services (Ministry of Social Services, Government of Quebec, 1996).

Gaps in information given to patients continue to persist despite legislation. Research findings suggest that patients in North America have long reported they do not have enough information to make informed decisions about their care (Ellwood, 1988; Haug, 1994; Jones, Densen, & Brown, 1989). For example, Haug's study of patients, hospitalized as a result

of community-acquired pneumonia or for acute myocardial infarction, found only 57% of those interviewed reported understanding their medication side effects, and 50% did not know when they could resume normal activities. Jones et al. found that many discharged patients were unaware of the community services available, and no one had talked with them about community services while they were hospitalized. The findings of Rowe et al. (1997) revealed that the majority of patients who were told they required services were not given information about the services. They found over 70% of patients reported not receiving some aspect of specific information that might have made their home recovery easier or quicker (i.e., information on side effects of medication, where to seek help, or services in the community).

Knowing what information patients perceive as important to manage their care at home would help health care professionals focus the content of their educational interventions. Cleary et al. (1989), in a study designed to identify what aspects of health care matter to patients, found that patients wanted to negotiate the health care system effectively and be treated with dignity and respect. Patients wanted to understand how their sickness or treatment would affect their lives and often feared that doctors were not telling them everything. They wanted to learn how to care for themselves

away from the clinical setting, and wanted health care providers to focus on their pain, physical discomfort, and functional disabilities.

Rowe et al. (1997) found that patients who received greater amounts of information were more involved in decision-making about their care. While this indicates a positive relationship between the amount of information available to patients and the degree of participation in decision-making, caution must be exercised in generalizing this finding, given the exploratory nature of their study.

In an earlier Canadian study of factors associated with the pre-discharge informational needs of patients, Bubela et al. (1990) found that more informational needs were identified by females than males, and by those with malignant as opposed to benign disease. Length of hospital stay, number of discharge medications, and patients' perceptions of the influence of illness on their lives were positively correlated with informational needs at the time of discharge.

Breembaar & Van den Borne (1991) described the informational needs, support, and subjective experiences of short stay surgical patients in two large teaching hospitals in the Netherlands. Common themes of concern included a fear of the unexpected, a misunderstanding of and a desire for more information, and an expressed uncertainty as to who was responsible for

providing what information. These researchers concluded patient education endeavors were uncoordinated, inconsistent, and unpredictable.

Charles et al. (1994), in identifying problem areas experienced by patients during their hospitalization, revealed a specific deficit in educational processes. Almost 30% of patients received inadequate information regarding daily hospital routines, and 38% reported poor communication with professional staff.

Martens (1998) pointed out that education on medications is a major component of discharge planning and is essential for patients who need drug therapy and for those who are at high risk for re-hospitalization. In an ethnographic study of the process of medication discharge education with older persons diagnosed with heart disease, the researcher concluded that medication discharge education should be formalized, coordinated, and ongoing throughout the entire hospitalization.

Patient informational needs has been the focus of two studies in St. John's, Newfoundland. In a descriptive, correlational study, Jacobs (1995) examined the informational needs of 45 discharged short-stay surgical patients. Forty percent of patients reported that their learning needs were related to complications, elimination and activity levels. No significant relationships were found between patients' total informational needs and age,

gender, level of education, length of hospital stay, number of medications on discharge, or type of surgery performed.

Harkins (1995), in an exploratory study of 60 surgical patients, identified a number of informational concerns not addressed prior to discharge. Concerns regarding excess fatigue were reported by 67% of the sample; 51% reported concerns about patterns of elimination; and 37% expressed concerns related to psychosocial well-being. Caution is indicated when interpreting these results as the measurement tools utilized were developed by the researchers and have not been subjected to subsequent testing.

Perceptions of Health Providers

Patients and health care providers often disagree about aspects of discharge planning (Farrell, 1991; Lauer, Murphy & Powers, 1982; Reiley et al., 1996; Van Veenendaal, Grinspun, & Adriaane, 1996; Rowe et al., 1997). Farrell explored how accurately nurses perceived patients' needs for education in both acute care and psychiatric settings. She found that, in both settings, nurses tended to stereotype patients and were unable to accurately perceive their needs. Lauer et al. found that oncology patients and nurses had different perceptions about information conveyed and about the prioritization

of different types of information. Nurses believed that patients most need to know about financial assistance, how to care for themselves at home and work, and how to talk to families and friends about concerns. Patients, however, reported that it was most important for them to know about their diagnoses, the plan of care decided upon by their physician, how to care for themselves at home and work, and what their experiences would be during diagnostic procedures. The researchers also found that nurses' estimates of patients' level of knowledge and desire for information was significantly higher in comparison with patients' personal estimates.

Reiley et al. (1996), in an exploratory study to determine how well primary nurses predicted the functional status of patients and whether patients and nurses agreed about patients' understanding of the post discharge treatment plan, found significant differences between patients' and nurses' perceptions. Nurses over-estimated patients' knowledge and their understanding of the post-discharge treatment plan. They consistently under-estimated patients' perceptions of their functional abilities.

Perceptions about amount and quality of information vary. Clemens (1995), in her study of 40 randomly selected triads (i.e., patients, a family care-giver, and a discharge planner), found lack of agreement between discharge planners and family care-givers on the amount of information given

to patients. Discharge planners believed that a great deal of information was given to patients, whereas half of the care-givers felt little or no information was given. Clemens found that patients were seen by their care-givers as having little influence in the discharge decision, even though a significant proportion of nurse and social work discharge planners believed patients received more than sufficient information. Larrabee (1995) found no relationship between patients' perceptions and providers' perceptions of quality of care. Rowe et al. (1997) found that health care providers estimated that their patients obtained significantly more information, were more satisfied, and were more confident than was reported by patients.

McCauley, Lowery & Jacobsen (1992) compared the perceptions of cardiac patients about their course of recovery with nurses' perceptions. They found that nurses were significantly more negative in their perceptions of patients' future recovery than were patients. As well, Fernsler (1986) found that nurses underestimated patients' needs for assistance with activities of daily living.

A number of other studies have pointed out that provider contributions to discharge planning may be hampered by their bias. Acute care providers often identify patients' needs as they relate to hospitalization rather than to discharge and home care. In a study designed to compare the hospital

discharge planner's assessment of patient needs at time of discharge with the patient's assessment of needs, Arenth & Mamon (1985) found that the hospital discharge planner under-assessed patients' needs in activities of daily living, selected aids, and instruction in certain content areas.

Outcomes: Health/Functional Status and Satisfaction

The outcomes movement in health care originated with Ernest Codman, who made the suggestion early in this century that health professionals should provide follow-up care to patients and learn about the outcomes of their hospitalization experiences (Delbanco, 1992). Avedis Donabedian expanded this concept by suggesting that patients are in a unique position to assess important aspects of quality of care (Donabedian, 1989).

Among the most important health care developments of the last decade is an increasing consensus on the centrality of the patient's point of view in monitoring health care outcomes. Although patients are usually the best judges of whether their health care goals have been achieved, data have not been routinely collected from them. Patients are also the best information sources regarding their experiences with disease and treatment, but this information is not usually a part of the medical record or health care data base. Patients remain a largely untapped resource in efforts to improve the

quality of health care in an increasingly cost-conscious environment (Larrabee, 1995; Ware & Davies, 1995).

The current health care system is interested in patients' views of care because it has been well established that (a) diagnosis and treatment depend on clear communication of information, as well as patient participation in the treatment process (Charles et al., 1994; Cleary et al., 1989, 1991; Fitzpatrick, 1990); (b) patient satisfaction with care is predictive of future behavior such as adherence to treatment regimes (Rubin, 1990); and (c) patient preferences can be used by providers to choose ways of organizing and providing care (Ware & Davies, 1995). Systematic investigation and study of patients' experiences with health care will move the health information system beyond anecdotal and clinical documentation. Discrete reports from patients are more helpful than global measures because they indicate in a concrete way what patients did and did not experience.

Health and Functional Status

There is a general consensus that it is important to identify the key features of health care associated with favorable patient outcomes so that these features can be preserved, despite constraints imposed by a cost-conscious system (Tarlov et al., 1989). During the last decade the definition of

outcomes has expanded from traditional measures of mortality, morbidity, and cost, to include patients' perceptions of health, and their evaluations of the quality of care and services. The importance of measuring the non-medical determinants of patient outcomes and the influence of perceived health status on patients' expectations of quality of care has been recognized (Jennings & Staggers, 1998; Wojner, 1996). Health status outcomes are now mandated in U.S. law, with the passing of the Patient Outcome Research Act in 1989, followed by the establishment of a broad-based, patient-centered outcomes research program. This law calls for measures of "functional status and well-being and patient satisfaction" in addition to traditional measures of survival, clinical endpoints, disease, and treatment-specific symptoms and problems (Ware & Davies, 1995). Health care outcomes have now come to mean the extent to which the results of various treatments meet patients' needs and expectations (Cleary et al., 1991; Kaplan & Ware, 1989; Ware, 1995).

In 1986 the Medical Outcomes Study (MOS) established the beginning of a new paradigm for monitoring the results of health care in the U.S. The MOS was a 4-year quasi-experimental study designed to help understand how specific components of the health care system affect outcomes of care. Outcome measures assessed included the clinical status, functioning and well-being of 22,462 patients with hypertension, non-insulin dependent diabetes

mellitus, recent acute myocardial infarction, congestive heart failure and depressive disorder, sampled from Health Maintenance Organizations and fee-for-service systems. Study participants were recruited from three large urban centers (Boston, Chicago and Los Angles) and followed from 1986 through to 1990. The MOS also compared information obtained from patients with that obtained from clinicians, and promoted outcome assessment as a tool in health policy evaluation, clinical research, and health care practice (Tarlov et al., 1989).

In a U.S. national survey of 6,455 adult medical/surgical patients recently discharged from general hospitals, Cleary et al. (1991), investigated the impact of different factors (i.e., patient demographics, perceived health status, preferences for being informed and involved in care, and reports on problems related to specific processes of care) on patients' evaluation of quality of care (i.e., education, communication between patient and provider, respect for patient needs and preferences, financial information, provision of physical and emotional comfort, family involvement, and discharge planning). The findings indicated that the number of care problems reported (i.e., lack of information regarding hospital routine, how much pain to expect, when to resume normal activities, and side effects of medications) was the strongest predictor of quality of care. Patients who were sicker, had lower incomes,

were younger, and wanted more involvement in their care, generally gave worse evaluations of their care. The researchers acknowledged that findings were limited due to the lack of clinical severity data and the non-probability sample.

Between June, 1991 and May, 1992 the first Canada-wide outcomes study of recently hospitalized medical/surgical patients (N=4,500) was conducted in six provinces (i.e., British Columbia, Alberta, Saskatchewan, Ontario, Quebec, and Nova Scotia) by Charles et al. (1994). The objectives of this cross-sectional telephone survey were to document patients' perceptions of their hospital experiences and level of satisfaction with care, and to determine the extent to which satisfaction varied by patient characteristics, length of hospital stay, and hospital setting. A number of outcome indicators were used to assess patients' satisfaction, including: (a) provider-patient communication, (b) providers' respect for patient preferences, (c) attentiveness to patients' physical care needs, (d) education of patients regarding medication and tests, (e) quality of relationship between patients and physicians, (f) communication with patients' families regarding care, (g) pain management, and (h) discharge planning. The majority (61%) of patients surveyed in the study reported problems with five or fewer care processes. Regression analysis showed poor health status, younger age, being female,

and being married, to be significant predictors of the number of care problems.

The findings from the study by Charles et al. (1994) are similar to those reported by Cleary et al. (1991). Both groups of researchers found that patients in better health were more likely to report fewer problems with their hospital care than those in poorer health. Unlike Cleary et al. (1991), Charles et al. found no consistent association between household income and the number of problems care reported by patients.

A more recent study of patient-based outcomes was conducted by Rowe et al. (1997). This descriptive exploratory study examined the hospital experience and home-based recovery of short stay and day surgery patients in five large urban teaching hospitals in Montreal, Quebec. Family members, health care providers, and community key informants also participated in this study ($N = 1332$). The researchers found no significant differences in health status scores between the short stay and day surgery patient groups. Both groups experienced a slight, but non-significant, decline in their physical health during the two weeks after discharge. The functional status scores for both groups of patients were virtually identical. Day surgery and hospitalized patients improved across all categories of functional status between three days and two weeks following their return home. Over 90% of patients reported

high levels of satisfaction with arrangements for their return home, however, over 70% of patients did not receive specific recovery-related information. Over 65% of short-stay and 37% of day surgery patients were not consulted by hospital personnel about discharge arrangements, and 43% of short-stay and 35% of day surgery patients were not involved in decision-making regarding their care.

Consistent with the findings of Rowe et al. (1997), Charles et al. (1994) found that 39% of patients reported having inadequate information regarding expected illness events following discharge, 32% had not been told when they could resume their normal activities, and 29% reported not knowing what activities they could or could not do at home. Data in this survey were collected prior to restructuring and regionalization in the Canadian health care system.

Satisfaction

Patient satisfaction with care is seen as a dimension of quality of care (Cleary et al., 1991; Donabedian, 1989; Fitzpatrick, 1990). Pascoe (1983) defined patient satisfaction as "a health care recipient's reaction to salient aspects of the context and process and result of their service experience" (p. 185). According to this view, satisfaction consists of both a cognitive

evaluation and an emotional reaction by patients. Measures of patient satisfaction focus on patients' reports or ratings of care, reflect patients' perspectives, and target patient-centered components of care (Charles et al., 1994).

There has recently been an increase in the number of studies addressing the issue of patient satisfaction with health services. Although widely used, there is little explanation or overall consensus concerning the concept of patient satisfaction (Sitzia & Wood, 1997). What is learned when patients are asked about satisfaction is not completely clear. Despite this, patient satisfaction is upheld in the literature as an appropriate outcome variable because its relationship to recall and adherence to health care advice indicates that it could be an important determinant of health status (Hall & Dornan, 1988; Thomas & Bond, 1991). Studies also show that satisfied patients are more likely to re-attend the same service for further treatment, show an improvement in symptoms, and have a high level of understanding about their illness (Wellwood & Warlow, 1995; Proctor et al., 1992). Sadly, some health providers remain unconvinced of patients' ability to comment on their care, in particular on the more technical elements. Most agree, however, that in many areas of health care it is desirable for patients to contribute to the evaluation of services and thus enhance satisfaction with care (Davis &

Tilley, 1996; Pereles & Russell, 1996; Robinson & Miller, 1996; Wellwood & Warlow, 1995).

The literature on satisfaction with care shows that patients generally rate health services positively. Studies have shown that 75% to 98% of patients are extremely or very satisfied with medical services (Cleary et al., 1992; Cleary & McNeil, 1988; Edwards et al., 1991; Garber, Brenner, & Litwin, 1986; Rowe et al., 1997). Research conducted to evaluate the associations between patient socio-demographic characteristics such as age, race or social class, and patient ratings of care has shown inconsistent and sometimes contradictory results, with the exception of three findings (i.e., older patients tend to report higher levels of satisfaction than younger patients, women tend to be more satisfied than men, and patients in poorer health often are less satisfied than healthy persons). Unfortunately, there has been limited analysis of the factors that might account for these associations (Cleary et al., 1992; Cleary & McNeil, 1988). Berkman and Abrams (1986) found that patient satisfaction did not vary by length of stay, readmission, or more management difficulties. However, patients who expressed more need for post-discharge help were less satisfied with hospital services.

Hall and Dornan (1988) examined patients' satisfaction with care in a meta-analysis of 221 studies published from 1966 -1986. They found that

satisfaction studies reflected patients' assessments of health care system performance, as well as patients' values and expectations regarding different aspects of care. Satisfaction was correlated with external variables such as patient background, provider behavior and setting characteristics, but much of this research had a weak theoretical basis and was often the product of combining satisfaction with other variables. The majority of studies examined in the analysis were correlational in nature, had large sample sizes, had twice as many females, and were evenly divided between direct and indirect questions on satisfaction. Over half of the studies measured a specific referent event and focused on adult ambulatory care. Nearly three-quarters of the studies were devised by the investigators and instruments were assembled from commonly used terms and had not been used in previous research. The elderly were an infrequently studied group.

Another consistent finding in the literature is that when providers make care more "personal," patients tend to report higher levels of satisfaction. Providers' communication skills, empathy, and caring appear to be factors patients consider to be the most important when they evaluate care received (Cleary & McNeil, 1988).

There is an important distinction between satisfaction measures that refer to care in general and those that refer to specific dimensions of care. A

number of studies suggest that general and specific measures of satisfaction will yield different results, with specific measures more accurately assessing the services received (Cleary & McNeil, 1988; Pascoe, 1983). Williams (1998) noted that patients' expectations, experiences, needs and attitudes regarding specific elements of the health care system and its professionals are often not considered in studies, even though these variables influence patient satisfaction.

Despite methodological and conceptual limitations, the investigation of patient satisfaction should be extended to discharge planning for several reasons. First, the importance of discharge planning to the fiscal health of hospitals is clear. Second, discharge planning has the potential for enhancing the efficient use of the continuum of care and preventing costly hospital readmission. Because many patients now leave acute care with higher levels of functional dependency (Kosecuff et al., 1990), careful planning is needed to ensure that patient needs are met in other levels of care. Finally, discharge planners have close contact with patients and families and thus may be key figures in patients' reports of their hospital experience.

Several studies have examined satisfaction and patient involvement in the discharge planning process (Charles et al., 1994; Dunkle, Coulton & Mackintosh, 1982; Haddock, 1991; Proctor et al., 1992; Rowe, et al., 1997;

Stuen & Monk,1991). Most reported that patients with higher levels of involvement were more satisfied with their care plan at discharge. Proctor et al. (1992) explored factors affecting patient and family satisfaction with discharge plans. Patients' ratings of satisfaction were related to degree of involvement in decision-making, marital status, gender, and physical condition. Patients reporting higher levels of involvement were more satisfied; married patients and women rated their plans as significantly more adequate; and more physically dependent patients were less satisfied. Stuen & Monk (1991) examined satisfaction with discharge planning and service delivery at 4-5 weeks post-discharge for elderly medical and surgical patients discharged to the community. They found that, although most patients were satisfied with both discharge plans and post-hospital care, a sizeable number of the dissatisfied subgroup suffered from chronic conditions.

Summary

The self-reported patient data from these studies indicates that some patients are experiencing problems in various areas of the health care system. It is important that patients' reports of their health care experiences continue to be included in health research. The methodological and conceptual limitations of previous studies should not deter researchers from utilizing

measures which identify specific changes in structure or process that have the potential to improve the quality of care in hospital settings. Given that most published studies took place prior to the changes in the way health care is currently delivered, it is important to study patients' experiences within newly structured health systems in order to see if the new way of doing things is working for patients.

Discussion

Research on patient-based outcomes is ongoing, and there is sufficient support to focus on patient-based approaches in outcomes research. From this review of literature it is clear that, until recently, patients had not been asked in any empirical way how they experienced the process of discharge planning (Charles et al., 1994; Feather, 1993; Rowe et al., 1997). Little attention has been directed toward patient-based evaluations of the discharge plan itself (Proctor et al., 1992). There is limited published research on patients' participation in decision-making, understanding of treatment plans, or satisfaction with discharge arrangements in newly restructured patient-centered health environments.

A number of different instruments have been used to measure health status, recovery at home, and patient satisfaction. Some of these tools have

established reliability and validity in certain populations, others have been newly developed and have not been well tested. Methodological variations may account for some of the inconclusive findings. Sample size was small in a number of studies, which reduced the significance of the findings. Many studies included patients who have experienced a variety of diseases and who represent a range of age groups. A variety of socio-demographic characteristics and some differences in qualitative and quantitative findings demonstrate a need for further study. Conceptual ambiguities in the patient satisfaction and participation literature may have contributed to the lack of conclusive findings. Many of the studies reported general ratings of satisfaction which are difficult to interpret, and the majority of studies have been conducted with outpatients. There has been little replication of studies.

Guadagnoli and Ward (1998) reviewed the literature for and against patient participation in care. They reported that studies measuring patients' participation in decision-making have yielded conflicting results, and the evidence for a positive outcome for patients who do participate is suggestive rather than conclusive. Two findings emerged from their work: patients want to be informed of treatment alternatives and they want to be involved in treatment decisions, especially when more than one effective alternative exists.

From a review of prior work examining differences in patients' and providers' perceptions, two consistent themes arise. First, patients often rate their health and functional capabilities differently than health providers. Second, patients and providers may have different perceptions about whether important information has been effectively communicated, as well as what learning needs are most important (Reiley et al., 1996). Adequate information about post-hospital care options, adequate time to make a decision, perceived choice of options, and influence in decisions, enable patients to participate in the discharge planning process and to cope with outcomes (Abramson, 1988; Coulton, Duncan & Chow, 1988; Wetle et al., 1988).

It has been more than 30 years since Donabedian began his theoretical and empirical work on quality assessment of health care. Until recently, little of the systematic work on quality assessment has taken advantage of the information and perspective that patients can provide. Published work describing predictors of positive health outcomes for patients is minimal. More research is required to understand factors that determine positive health care outcomes for older hospitalized patients. Further research in this area can only enhance theory development and health care practice.

Conceptual Framework

The World Health Organization (WHO) defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). This definition calls attention to the multi-dimensionality of health. The multiple dimensions include not only the physical, mental, and social dimensions specified by the WHO, but also the variant indicators measuring those dimensions such as functioning, symptoms, emotional status, and differing diagnoses (Ware, 1987).

The Medical Outcomes (MOS) Study (Tarlov et al., 1989) incorporated the WHO's definition of health into its broadened conceptual framework of health indicators. It assumed two dimensions of health—physical and mental—and incorporated social functioning as an indicator of those dimensions. The five categories of physical and mental health indicators of the MOS were: (1) health status, (2) physical functioning and well-being, (3) mental functioning and well-being, (4) social/role functioning and well-being, and (5) general health perceptions.

Health status includes information on the presence and severity of various diseases or conditions, either chronic or acute. Functioning pertains to the ability to perform various daily activities and functions (e.g., walking, performing household tasks, working). Well-being refers to more subjective

internal states such as symptoms or feelings, not always observable by others. Physical functioning and mobility are indicators of physical health. Psycho-physiologic symptoms (e.g., fatigue, appetite loss, upset stomach) can indicate either physical or mental health.

The category of mental functioning and well-being includes both cognitive and affective components. Psychological distress that is attributed specifically to health problems (e.g., worry about health) is included. Limitations in the ability to perform daily social and role activities because of health problems are also health indicators.

Perceptions of health are personal judgements and evaluations of one's own health status. Such perceptions reflect actual physical and mental health as well as people's values, cultural background, and personal beliefs about what constitutes health. How people perceive their health is important because it makes them decide whether or not to seek health care assistance. What can be even more important than people's self-reports of their levels of health is whether they are satisfied with their health status. One person may be satisfied with a level of health while another person may be dissatisfied. Thus, people's preferences for different health states are an important component of health status that can be assessed (Stewart & Ware, 1992).

The MOS framework demonstrates that a useful way to monitor the results of health care is to begin with outcomes and then examine variations in the process and structural features of care thought to be most important in explaining and determining those outcomes (Donabedian, 1980; Tarlov et al., 1989). The MOS examined relationships between the structural components of care (i.e., system, provider, and patient characteristics), process components (i.e., technical and interpersonal style of provider care, and patient participation), and various outcomes of care (i.e., clinical endpoints, functional status, general well-being, and satisfaction).

The current study adapted aspects of the MOS framework and evaluated the impact of a restructured health care environment on patients. Information was gathered on structural variables such as socio-demographic and illness-related characteristics of patients that may influence health outcomes. Information was also gathered on process variables such as the extent to which patients participated in making decisions and shared responsibility for their treatment, and whether health providers informed patients about their course of hospital treatment and what symptoms to expect during recovery at home. Information regarding patients' level of confidence in resuming normal daily activities at discharge, and their knowledge about, and access to community based health services was also obtained. Process

and structure were examined to determine their impact on patient outcomes such as physical and mental health, functional status (i.e., activities of daily living, mobility, communication, instrumental activities of daily living), illness symptoms, and satisfaction with hospitalization and discharge planning at two weeks post-discharge. The use of a broad array of patient-based outcome measures and the significance of their change over time is a hallmark of this study.

Figure 1 is a graphic presentation of the hypotheses about: relationships among patient characteristics (box A), such as age, gender, marital status, education, income; illness-related variables (box B), such as physical and mental health, length of hospital stay; discharge planning indicators (box C); including patients' participation in decision-making, understanding of health problems and reasons for medical tests, and confidence in resuming usual daily activities at discharge; and patient recovery-related outcomes (box D), including patients' physical and mental health, functional status (i.e., activities of daily living, mobility, communication, instrumental activities of daily living), illness symptoms, and satisfaction with discharge planning and their overall hospital experience.

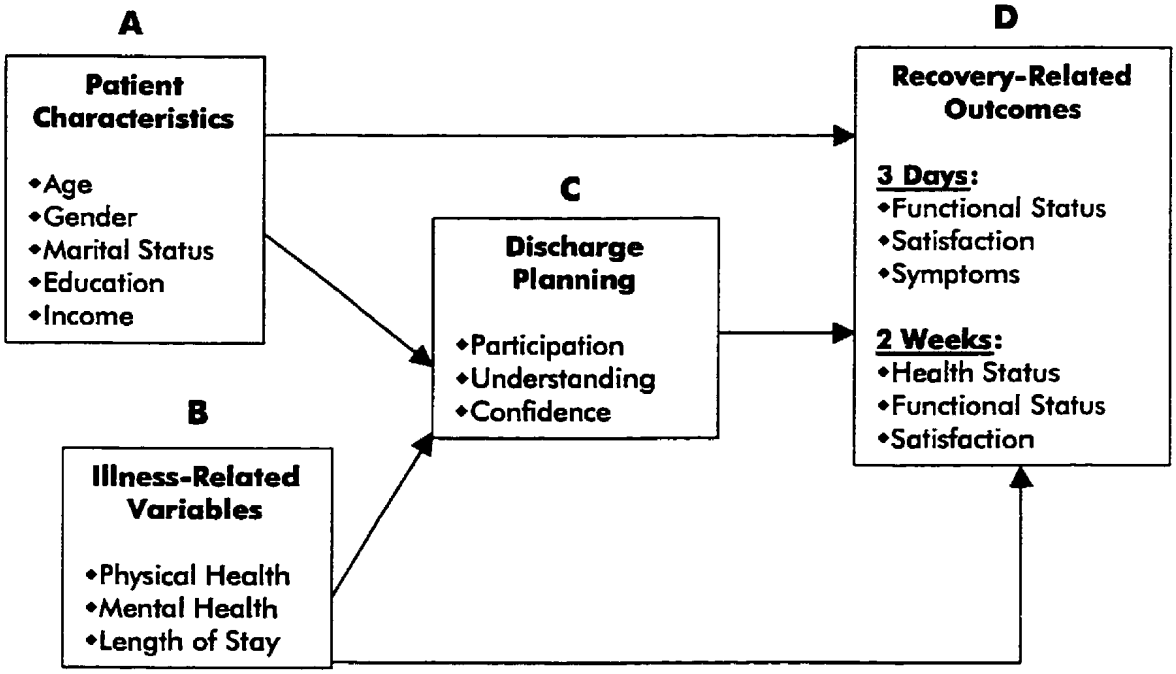

Figure 1. Proposed Relationships Among Study Variables

Note: Functional Status = activities of daily living, mobility, communication, instrumental activities of daily living; Health Status = physical health, mental health.

CHAPTER 3

Methodology

The purpose of this chapter is to describe the methodology for the study. Included is a description of the design, sample, setting, instruments, procedure, and the steps taken in data analysis.

Design

The design for this prospective, longitudinal study is descriptive-correlational. Little research exists on the relationship between discharge planning variables and health care outcomes; therefore it is important to describe aspects of the discharge planning process that may be associated with health outcomes. This design allows the investigator to examine associations between patients' characteristics, indicators of discharge planning and patients' health and functional status. It also allows for examination of providers' perceptions of patients' discharge planning experiences. Other independent variables of interest are patients' socio-demographic characteristics (i.e., age, gender, marital status, education, income), and illness related variables (i.e., physical/mental health, length of hospital stay), as well as measures of discharge planning (i.e., understanding, participation, confidence). The dependent variables are patients' physical and mental

health, functional status, illness symptoms, and satisfaction with discharge planning and their overall hospitalization experience.

Sample

The target population includes all patients who were admitted to medicine, surgery, cardiac, and gynecology programs at one of three hospital sites of the Health Care Corporation of St. John's between January and June, 1998. The accessible population was restricted to patients who met the following inclusion criteria: (a) 55 years of age or older, (b) exhibited no cognitive impairment, (c) exhibited no signs of acute distress, (d) returned home following hospitalization, (e) reachable by telephone following discharge, and (f) able to speak and understand English.

In order to facilitate data collection within the six month time frame, a non-probability convenience sample was used. Of the 1,243 patients who met the inclusion criteria, 36% (n = 448) refused to participate in the study when approached by a research assistant. Reasons given by patients who refused included too ill (28%), too hard of hearing (16%), simply not interested (38%), not available after discharge (6%), about to be discharged (8%), and advised by family members (4%).

The final sample size was 795 patients at the time of initial data collection (i.e., between 1 to 3 days after admission to hospital). Follow-up telephone interviews were conducted with 512 patients at three days post-discharge, and with 430 patients at two weeks post-discharge. The drop-out rate was 35.6% at three days post-discharge and 16% at two weeks post-discharge. The main reasons for discontinuing study participation included: (a) not available at the designated time of contact by the research assistant (no answer at the contact telephone number, despite several attempts to reach participants); (b) too sick to complete the second or third interview; or (c) readmitted to hospital during the study period.

There were 390 hospital health-care providers who participated in the study. Of these, 320 were nurses, 56 were physicians and 14 were social workers. Almost half of the health-care providers had professional experience of more than 10 years. There were 186 patient-provider matched data sets. Each matched set consisted of a patient and either a nurse, physician, or social worker.

Setting

The setting for this study was the Health Care Corporation of St. John's Newfoundland. Three tertiary care adult teaching hospitals with medical, surgical, women's health, and cardiac programs participated. The three

hospitals have an operating capacity of 693 beds, 220 of which are medicine, 277 surgery, 43 cardiac care, and 21gynecology.

Procedure

The recruitment of patients began immediately following ethical approval from the human investigation committee (see Appendix A), Faculty of Medicine, Memorial University of Newfoundland. A meeting was held with the charge nurses of hospital units from which patients were to be recruited and eligibility criteria were explained. Patients who met the inclusion criteria were identified each day by the charge nurses and this information was communicated to the research coordinator at each hospital site.

A trained research assistant contacted patients in their hospital rooms, explained the study to them, and provided a written brochure outlining the study. Contact numbers were written on the brochure and consent form, and the patients were told to contact the researcher if they had any further questions. Patients who were willing to participate signed a consent form (see Appendix B). A copy of the consent form was placed on the patient's medical chart.

There were three phases of data collection. Following the process of informed consent, each patient was interviewed face-to-face in his or her

hospital room, and the SF-12 Health Survey (see Appendix C), as well as the Patient Information Questionnaire (see Appendix D), were administered by the research assistant. This interview was 15 minutes in length. The next period of data collection with patients occurred at three days post-discharge. The same research assistant contacted each patient by telephone, and the Post-Hospital Questionnaire (see Appendix E), the Symptom Questionnaire (see Appendix F) and the Functional Autonomy Measurement (FAMS) System (see Appendix G) were administered. This interview was 20 minutes in length. The final period of data collection with patients occurred at two weeks post-discharge. Again, the research assistant contacted each patient by telephone, and three instruments were administered: the SF-12 Health Survey, the Symptom Questionnaire, and the FAMS. This interview was 15 minutes in length. There were no problems noted with the telephone survey method.

A letter of introduction and a description of the study were mailed to hospital health-care providers (nurses, physicians and social workers) at the beginning of the data collection process. All were asked to complete a short questionnaire (8 minutes completion time) on each study participant for whom they provided care on the day of discharge. Questionnaires were left on the patient's chart for physician completion and on the Nursing Kardex for nurse completion. Social workers and nurse discharge planners were sent

questionnaires through the internal mail system on each participant who was identified by the charge nurse as having been referred to either a social worker or nurse discharge planner. All questionnaires were to be completed within two days of the patient's discharge home, and returned to the researcher in the self-addressed envelope provided.

Instruments

Patient Measures. The five patient data collection instruments used in this study are described below. The key components of each instrument and the time(s) of administration are summarized in Table 1.

Table 1

Patient Measures and Times of Completion

Questionnaire	Measure	Time 1	Time 2	Time 3
Short-Form Health Survey (12 items)	Physical and emotional well-being	✔		✔
Patient Information Questionnaire (14 items)	Demographic information	✔		
Post-Hospital Questionnaire (28 items)	Level of patient involvement and knowledge; the hospital experience and outcome		✔	
Symptom Questionnaire (10 items)	Physical symptoms (expected and knowing what to do)		✔	✔
Functional Autonomy Measurement System (24 items)	Functional status; sources and stability of resources		✔	✔

Note: Time 1=in hospital (4 week recall period), Time 2=three days post-discharge, Time 3=two weeks post-discharge.

a. Short-Form-12 (SF-12) Health Survey (Ware & Davies, 1992).

Constructed from the SF-36 Health Status Survey which is widely used throughout the world, the psychometrically sound SF-12 (see Appendix C) is a multi-purpose short-form generic measure of health status (Ware & Davies, 1992). The SF-12 is a useful instrument in studies focusing on patient-based

assessments of physical and mental health. It was developed to be short, yet valid, in large surveys of general and specific populations and has become an increasingly popular instrument, with an estimated one million surveys administered in 1995.

The SF-12 measures eight concepts, which comprise the physical and mental health summary scales routinely represented in large health surveys: physical functioning, role limitations due to physical health problems, bodily pain, general health, vitality (energy/fatigue), social functioning, role limitations due to emotional problems, and mental health (psychological distress and psychosocial well-being). The standard recall version which identifies activities, levels of health, etc., during the preceding four weeks was used during the first patient interview; the acute version, which involves a one week recall, was administered during the third interview with patients.

Studies have shown the reliability of this instrument with samples across a wide range of ages from the United Kingdom, USA, and Australia (Bayliss et al., 1997; Ware, Kosinkski, & Keller, 1996). Test-retest reliability for the physical and mental health scales was 0.89 and 0.76 respectively, using general population samples from the U.S. This exceeds accepted standards for measures used in monitoring and measuring health at the group level (Nunnally & Bernstein, 1994).

Correlations among SF-12 and SF-36 physical and mental scores have been reported to range from .76 to .96, respectively. High correlations have been found in cross-validation studies for the general USA populations, differing in age and gender. The SF-12 is equally valid with large longitudinal studies of health outcomes.

b. Patient Information Questionnaire

A structured questionnaire was developed by the researcher (see Appendix D) to gather demographic information on selected patient characteristics (i.e., age, gender, living situation, level of income, education, occupation and diagnosis at admission).

c. Post Hospital Questionnaire (Fullerton, Grayson, & McKean, 1988).

The 28-item Post Hospital Questionnaire (PHQ) was designed (see Appendix E) to gather information from patients and hospital health care providers about patients' experiences. Questions address patients' understanding about their health condition and reasons for medical tests, participation in decisions about care, and preparation for discharge. Patients' level of confidence in their ability to resume regular activities at discharge and satisfaction with discharge arrangements are also measured.

The PHQ allows for the comparison of responses and perceptions between patients and health care providers. Initially, Fullerton et al. (1988) assessed face validity through clinical experts, and pilot testing was conducted with clients and family members. The PHQ is included in the second interview with patients, and is a major part of the Health Provider Questionnaire.

For the purposes of clarification and to update the language, the PHQ was modified from the original format to fit the parameters of the present study. The changes made were as follows: (1) Three questions were deleted from the PHQ to avoid duplication with another instrument: (i.e., while you were in hospital, did you have a primary nurse? Where did you go when you left the hospital? Was this arrangement temporary?). (2) The answering format of several questions was changed from a five point Likert scale to a three point scale (i.e., 1=none at all, 2=a little, and 3=a lot). For example, question 3.1 was changed in the following manner:

> While in hospital, how much of an understanding did you have of your health problems?
>
> [Please circle the number which reflects your feelings.]
>
> Not at all ---------- A great deal
> 1 2 3 4 5

to the new scale in the revised question:

> While in hospital, how much of an understanding did you have of the health problem that brought you to hospital?

None at all	A Little	A Lot
1	2	3

Similar changes were made to questions 4.1, 5.1, 11.1, and 19.1.

d. Symptom Measure Questionnaire (Rowe et al., 1997).

The 10-item, Symptom Measure Questionnaire (see Appendix F), was used during the second and third interviews with patients to identify and track physical symptoms at three days and two weeks post-discharge. Patients were asked to identify which of the 10 symptoms were experienced in the past two days, whether or not the symptom or symptoms were expected during that time, and whether or not they knew what to do about the symptoms. The ten symptoms included: shortness of breath, pain, light-headed while on feet, tiredness or weakness, nausea, vomiting, lack of appetite, constipation, diarrhea, insomnia.

e. Functional Autonomy Measuring System (Hebert, Carrier, & Bilodeau, 1993).

The Functional Autonomy Measuring System (FAMS) is an instrument (see Appendix G) developed by Hebert, Carrier and Bilodeau (1993) to assess the needs of older adults and the disabled living in the community. It is composed of 24 items that cover five fundamental areas of functional abilities:

activities of daily living, mobility, communication, mental functions, instrumental activities of daily living. It is a synthesis of many validated scales which measure functional capacity and is based on the World Health Organization's classification of impairments (Hebert et al., 1996).

The reliability and validity of the FAMS can be favorably compared to that of other instruments of the same type (Hebert, et al. 1996). An inter-rater reliability for each item of the instrument showed a mean weighted kappa of 0.75 (Hebert et al., 1993). The FAMS, which is quick and easy to use, examines objective criteria and can be used by professionals of various backgrounds and in varied settings (Desrosiers et al., 1995; Hebert et al., 1988). This instrument was originally created for administration in the individual's home where the interviewer could observe clients in their environment. In this study the FAMS was administered over the telephone, which necessitated format changes for easier administration.

Hospital Health Provider Questionnaire. Hospital health-care providers were asked to complete a questionnaire on each patient in the study for whom they were providing care (see Appendix H) on the patient's day of discharge. The questionnaire measured health providers' perception of a patient's participation in decision-making about care, knowledge of health

problems and reasons for medical tests, confidence in their ability to resume normal activities at discharge, and satisfaction with discharge arrangements.

Steps in Data Analysis

The focus of the analysis was to track and monitor patient discharge outcomes over a period of time. The analysis included an examination of relationships between patient and hospital-related characteristics and outcomes. This was done in several steps:

1. Descriptive statistics available through the Statistical Package for Social Sciences (SPSS, 1997) were used to describe the sample and address the study objectives.
2. Chi-square, Pearson's r, paired t-tests, and analysis of variance were used to assess the relationship between and among patient demographic characteristics (i.e., gender, age, marital status, income, education), illness-related variables (i.e., physical/mental health, length of hospital stay), discharge planning indicators (i.e., understanding, participation, confidence), and recovery-related outcomes (i.e., physical/mental health, functional status (i.e., activities of daily living, mobility, communication, instrumental activities of daily living), and satisfaction with discharge planning.

3. A series of regression analyses were set up to measure the simultaneous effect of patient characteristics, illness-related variables and discharge planning indicators on dependent variables related to hospital experience and recovery.
4. Non-Parametric tests (i.e., Wilcoxon Signed Ranks Test, McNemar Test) were used to compare health-care providers' responses to patients' reports on discharge planning.
5. A content analysis of responses to the open-ended question on patients' satisfaction with their overall hospital experience complements the quantitative data.

CHAPTER 4

Results

Study findings are presented in three sections. The first section presents a descriptive profile of the sample and study variables. The second section summarizes the relationships among variables (i.e., patient characteristics, illness-related variables, discharge planning, health/functional status), and the third section describes the predictors of mental and physical health and functional status at two weeks following hospital discharge.

Descriptive Profile

This section presents an overview of study findings on sample characteristics – socio-demographic and illness-related variables. Descriptive findings are also presented on health status, functional status, illness symptoms, and discharge planning.

Socio-Demographics

Although 795 patients participated in the face-to-face interviews conducted during hospitalization, the number dropped to 512 and 430 by the second and third interviews, respectively. Figure 2 presents the number of patients from each of the hospital sites who participated in each interview.

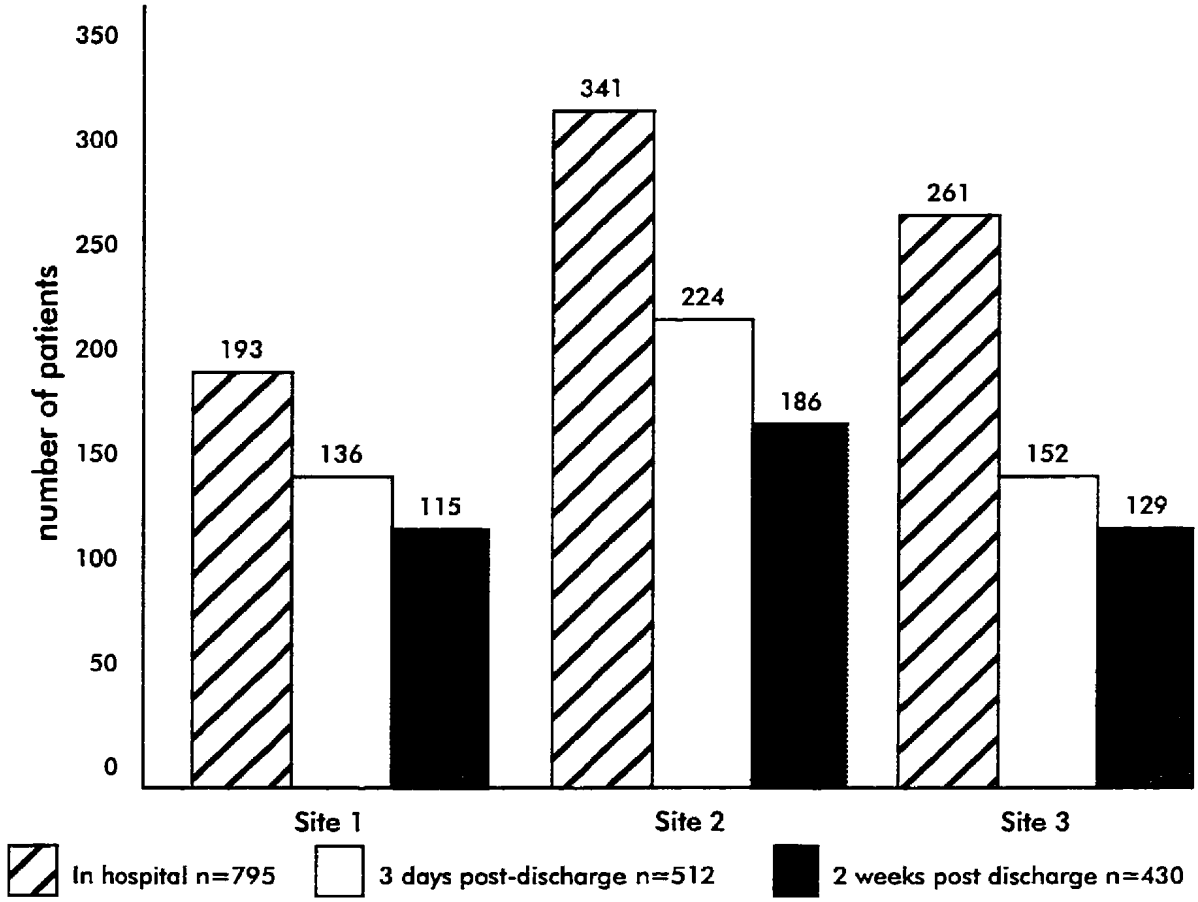

Figure 2. Study participants from each hospital site during hospitalization, and at three days and two weeks post-discharge.

There were striking similarities in the physical and mental health scores of patients who dropped out of the study and those who participated, indicating an unbiased selection process (see Table 2). The only significant difference noted between the two groups was the longer length of hospital stay for those patients who dropped out of the study. Study participants had a

mean length of stay of 9.73 days compared to the 12.06 days for the drop out sample.

Table 2

Selected Variables by Study Participants and Dropouts

Variable	Participants M (SD)	Dropouts M (SD)	t	p
Physical Health	35.03 (7.57)	35.39 (7.24)	.60	.551
Mental Health	49.03 (7.43)	48.15 (8.24)	-1.53	.125
Age	68.09 (8.04)	68.94 (8.76)	1.43	.153
Length of Stay	9.73 (7.97)	12.06 (9.76)	2.53**	.011

**$p<.01$

For the purposes of this study, the presentation of findings will be restricted to those participants (n = 430) who completed all three interviews. Table 3 summarizes the socio-demographic characteristics of this sample. Most patients resided in the St. John's area (52.2%), were married (68.2%), retired (70.8%), had someone they could turn to for help (94.4%), were 65 years of age or older (63.8%), and had high school or post-secondary education (56.4%). Fifty-two percent of study participants reported on their

income level (n = 225). Out of this number, the majority (65.9%) had an annual income of less than $25,000. In addition, there was a fairly equal number of male and female participants, 49% and 51% respectively.

Table 3

Socio-Demographic Characteristics (n[1] = 430)

Patient Characteristic		n	%
Gender:	male	212	49.3
	female	218	50.7
Age:	55-64	160	36.2
	65-74	172	40.2
	75-95	98	23.6
Education:	<highschool	192	44.6
	highschool	139	32.3
	>highschool	99	23.1
Marital Status:	married/common law	294	68.2
	widowed/divorced or separated	120	27.8
	single	16	4.0
Number of Children:	0	28	6.0
	1-2	114	27.4
	3+	288	66.6
Employment:	working	35	8.1
	retired	301	70.8
	homemaker	94	21.1
Annual Income:	< $25, 000	135	13.7
	$25,000-$50,000	60	46.3
	>$50,000	30	26.7
Geographic Region:	St. John's	228	52.2
	Other regions	202	47.8
Help at Home if Needed:	Yes	406	94.4
	No	24	5.6
Living Alone:	Yes	83	19.3
	No	347	80.7

[1] The sample size for income was 225.

Illness-Related Variables

Patient status upon admission was categorized as either emergent (37%), urgent (11%), routine (37%), or elective (15%). Hospital admissions occurred through the emergency department (39%), outpatient clinics (6%), directly from home (52%), or transferred from another hospital (3%). Patients were admitted to one of four programs: surgery (50%), medicine (24.2%), cardiac care (19.8%), and women's health - gynecology (6.0%). Of the 215 patients in the surgery program, 72% were admitted to general surgery, 19%, to orthopaedics, 7% to the head and neck unit, and 2% to neurosurgery. Figure 3 presents the total numbers of patients for each program.

In terms of required support services, only a small number of patients (12%) were receiving help at home prior to hospitalization. Of this number (n = 83), the regional community health board provided services to 60% and family members provided support to 12%. Support for the remaining 28% was provided by either by private health agencies, or the Department of Veterans Affairs.

The mean length of hospital stay was 9.73 days. Length of stay varied across the different programs. Specifically, patients admitted to surgery averaged 8.4 days, medicine 11.03 days, cardiac care 11.9 days, and women's health 7.8 days.

Although patient health problems are best described through case mix groupings (CMG's), this information was not available from the Canadian Institute of Health Information (CIHI) at the time of discharge or data analysis, thus discharge diagnoses were grouped by body system. Figures 4, 5, and 6 summarize the diagnostic groupings for patients admitted to each program.

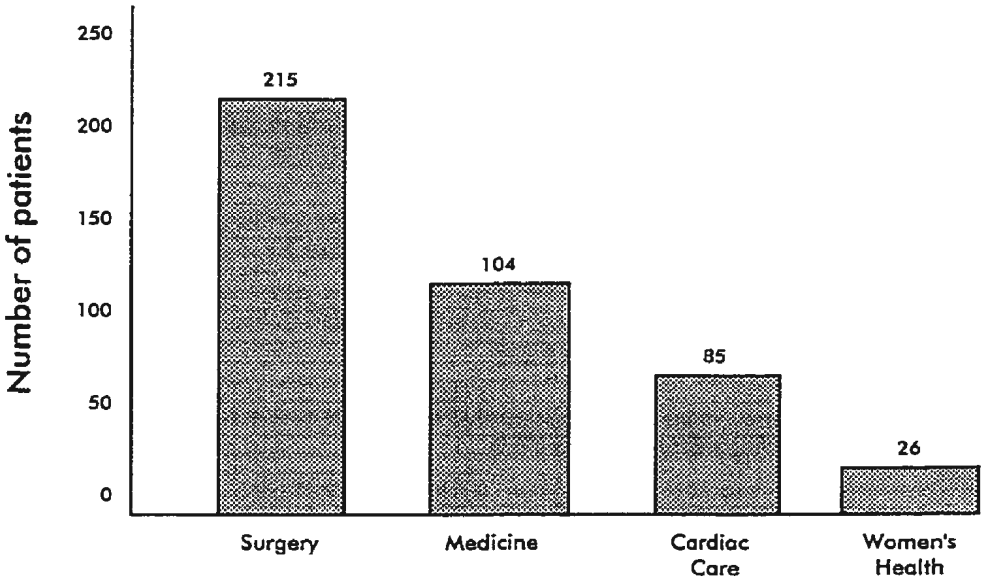

Figure 3. Patients admitted to each program (n = 430).

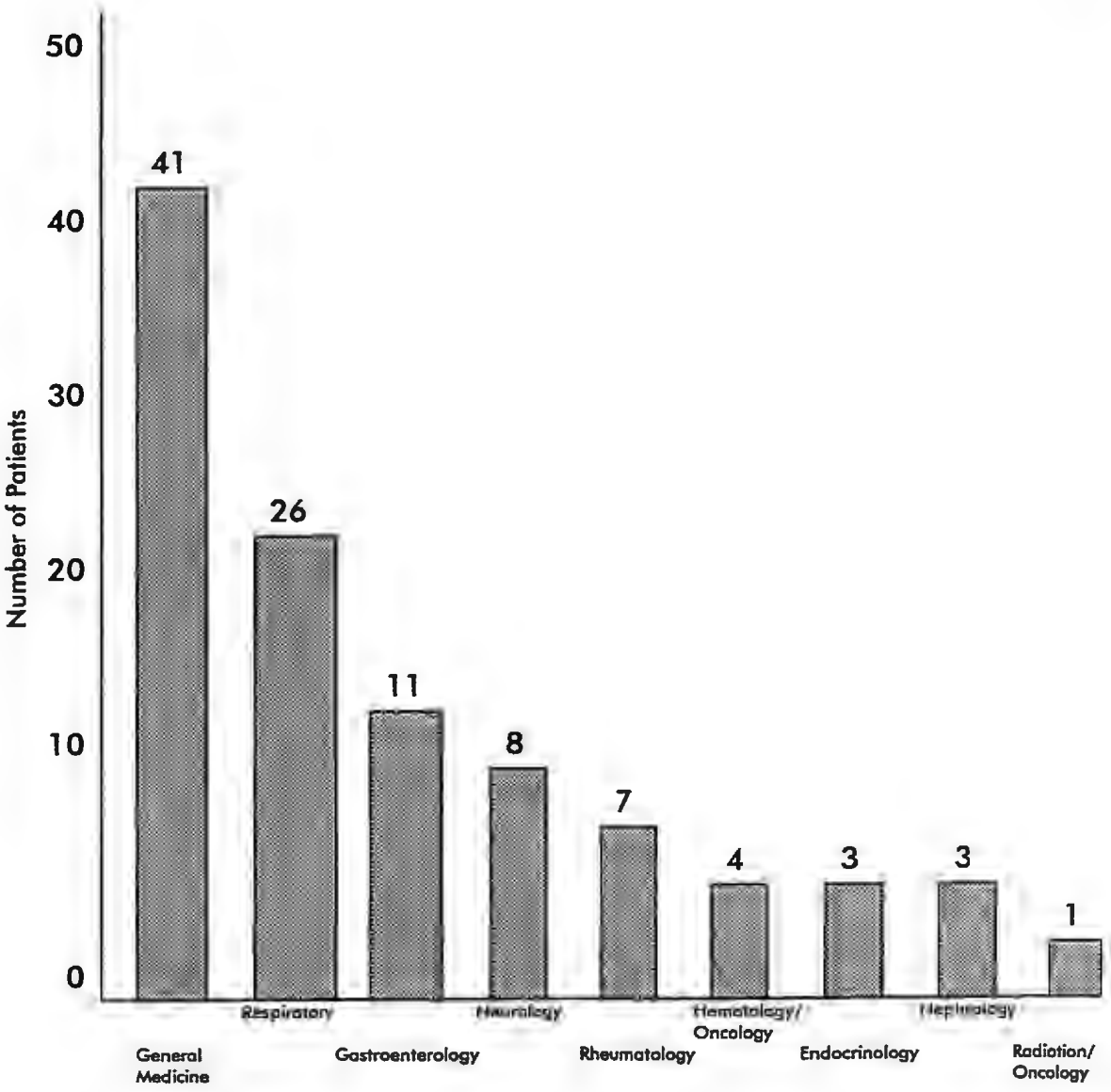

Figure 4. Diagnostic groupings for medicine patients (n = 104).

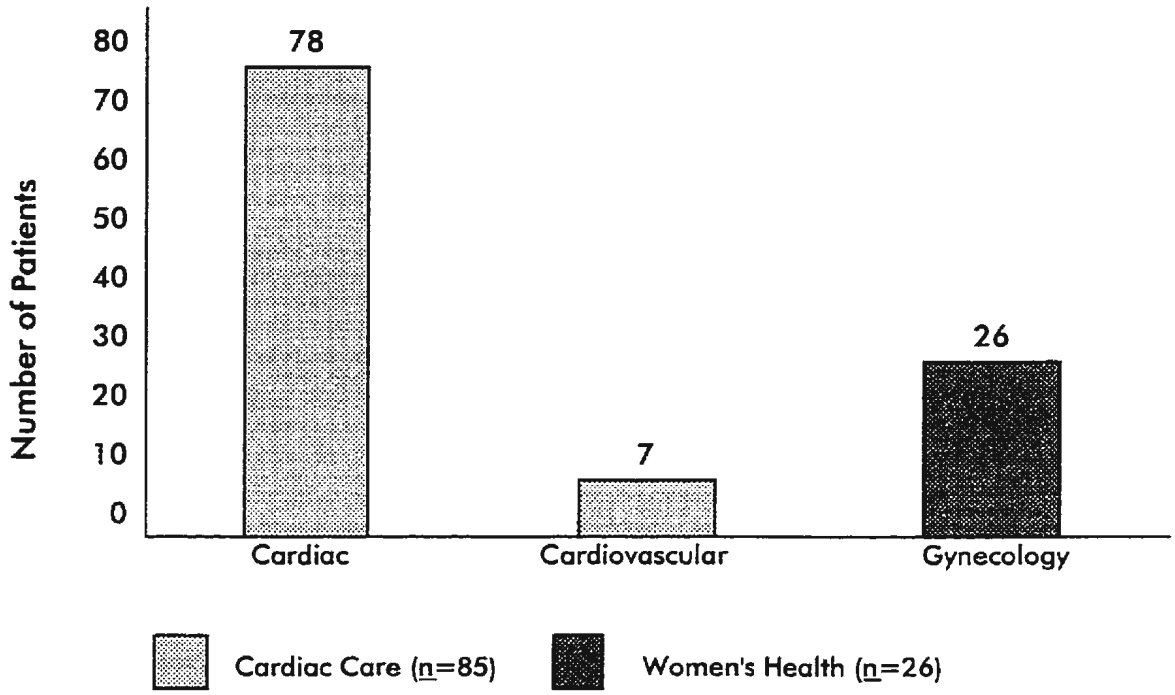

Figure 5. Diagnostic groupings for cardiac care and women's health patients (n = 111)

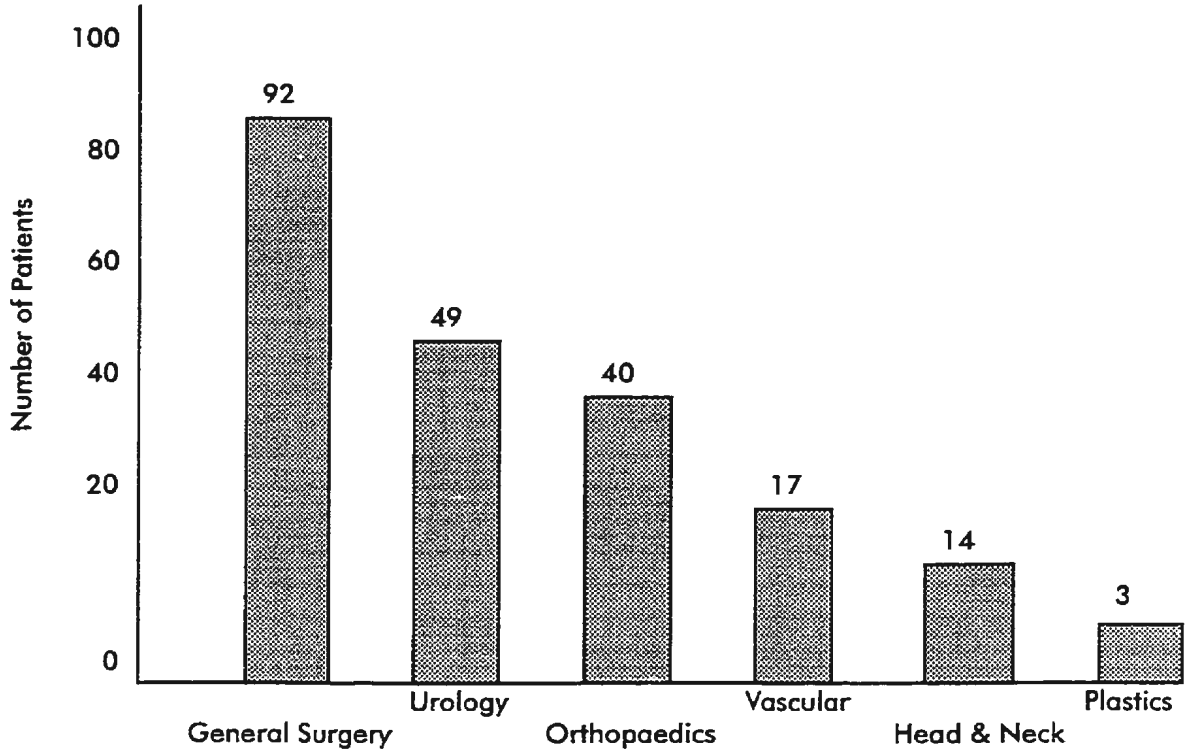

Figure 6. Diagnostic groupings for surgery patients (n = 215).

Health Status

Information on health status was collected at two time periods - one to three days following hospital admission and two weeks post-discharge. Study participants were asked to rate their overall health on a five-point rating scale ranging from excellent (1) to poor (5). During hospitalization patients were

asked to base their responses on the previous four week period, whereas the two week post-discharge ratings covered a one-week recall period.

Based on the four-week recall, most (62%) rated their overall health as being either generally good, or very good to excellent. This number had increased to 73% by two weeks post-discharge. There was a statistically significant difference between general health perception scores from hospitalization (M = 3.00) to two weeks (M = 2.77) post discharge (t = 4.96, p = .000).

The SF-12 Health Survey was used to obtain ratings on physical and mental health, with higher scores reflecting better health status. Although patients reported an improvement in their overall health, differences were noted in physical and mental health scores (see Table 4). For example, in-hospital ratings were lower for physical (M = 35.03, SD = 7.57) than mental (M = 49.04, SD = 7.43) health. At two weeks post-discharge, physical health scores (M = 33.26, SD = 7.50) were again lower than mental health scores (M = 50.23, SD = 6.71). There was a statistically significant difference between physical and mental health scores from hospitalization to two weeks after discharge (t = -3.13, p = .002; t = 4.16, p = .000; respectively).

These findings suggest that patients experienced a significant decline in their physical health and a significant improvement in their mental health from the four week period prior to hospitalization to two weeks post-discharge.

Table 4

Health Status Scores Recalled for the Four Weeks Prior to Hospitalization and Two Weeks Post-Discharge (n=420)

Variable	Time 1 M (SD)	Time 2 M (SD)	t	p
Physical Health	35.03 (7.57)	33.26 (7.50)	4.16**	.000
Mental Health	49.04 (7.43)	50.23 (6.71)	-3.13*	.002

Note: Time 1= 1 to 3 days during hospitalization (4-week recall period), Time 2= two weeks post-discharge.

*p<.05 **p<.01

In addition to providing ratings of overall health and physical and mental health status, participants were asked to indicate whether they expected their health to get better, worse, or stay the same. During the in-hospital period and at two weeks post-discharge, an equal number (76%) of participants expected their health to improve.

Functional Status

Study participants were asked to rate their functional status twice following hospital discharge (i.e., at 3 days and 2 weeks). The rating scale ranged from 1 to 5, with lower scores reflecting greater functional independence. The four areas of functioning included activities of daily living (ADL), instrumental activities of daily living (IADL), mobility, and communication. The functional status scores are summarized in Table 5.

The mean IADL scores at three days (M = 2.28, SD = .88) and two-weeks (M = 2.14, SD = .89) indicated that patients experienced a moderate amount of difficulty performing these activities. The mean mobility scores at three days (M = 1.30, SD = .50) and two weeks (M = 1.24, SD = .44) also suggested that patients experienced minimal limitations. Significant improvements were noted in IADL (t = 4.79, p = .000) and mobility scores (t = 2.92, p = .004) between the two time periods.

With regard to communication and ADL scores, the findings suggested that patients experienced less difficulties with these functional areas. Further, there were no significant changes in either of these scores over time.

Table 5

Functional Status Scores at 3 Days and 2 Weeks Post-Discharge

Variable	Time 1 M (SD)	Time 2 M (SD)	t	p
IADL	2.28 (.88)	2.14 (.89)	4.79***	.000
Mobility	1.30 (.50)	1.24 (.44)	2.92**	.004
Communication	1.04 (.12)	1.04 (.12)	0.35	.726
ADL	1.08 (.23)	1.07 (.21)	1.53	.125

Note. IADL= instrumental activities of daily living (e.g., housekeeping, meal preparation, shopping; ADL = activities of daily living (e.g., eating, dressing, personal hygiene). Time 1 = 3 days post-discharge, Time 2= 2 weeks post-discharge.

**$p<.01$ ***$p<.001$

Illness Symptoms

During the two post-discharge interviews, study participants were asked to indicate whether they had experienced specific physical symptoms. The mean number of symptoms experienced by patients at three days and two weeks after discharge was 1.85 (SD = 1.55) and 1.80 (SD = 1.65),

respectively. There was a decline in the number of symptoms experienced over time, but this observed difference did not achieve statistical significance.

Tables 6 and 7 present summaries of the symptoms reported at three days and two weeks post-discharge, respectively. In most instances, study participants expected the symptoms when they occurred and also knew what to do about them. The most frequently experienced symptoms at both time periods were tiredness/weakness and pain. Of those patients who experienced tiredness at three days, 93.9% expected this symptom and 94.4% knew what to do about it. At two weeks, a smaller percent of patients expected to be tired/weak (82.3%) and knew what to do about it (87.6%). Of those who experienced pain at three days, 86.8% expected it and 88.1% knew what to do about it. At two weeks a slightly lower percent of patients expected pain (82.4%) and knew what to do about it (83.5%).

Table 6

Illness Symptoms Experienced at 3 Days Post-Discharge (n=430)

Symptom	Experienced		Expected		What to Do	
	n	%	n	%	n	%
Tired/Weak	198	46.2	186	93.9	187	94.4
Pain	152	35.3	132	86.8	134	88.1
Lack of Appetite	76	17.7	62	81.5	63	82.8
Short of Breath	66	15.3	60	90.9	61	92.4
Lightheaded	77	17.9	61	79.2	65	84.4
Nausea	50	11.6	37	74.0	40	80.0
Vomiting	5	1.2	3	66.0	4	80.0
Constipation	64	14.9	50	78.1	60	94.0
Diarrhea	34	7.9	25	73.5	30	88.0
Insomnia	72	16.7	59	81.9	52	72.0

Table 7

Illness Symptoms Experienced at Two Weeks Post-Discharge (n=430)

Symptom	Experienced		Expected		What to Do	
	n	%	n	%	n	%
Tired/Weak	186	43.3	153	82.3	163	87.6
Pain	170	39.5	140	82.4	142	83.5
Lack of Appetite	59	13.7	40	67.8	37	62.7
Short of Breath	78	18.1	72	92.3	76	97.4
Lightheaded	65	15.1	40	61.5	48	73.8
Nausea	34	7.9	22	64.7	25	73.5
Vomiting	4	0.9	3	75.0	2	50.0
Constipation	57	12.6	45	78.9	46	80.7
Diarrhea	39	8 .6	31	79.5	32	82.1
Insomnia	89	20.7	64	71.9	63	70.8

Discharge Planning Variables

At three days following hospital discharge, study participants were asked a number of questions about their discharge planning experience. Information was obtained on when hospital personnel initiated discussions about discharge, whether required information about post-hospital health services was received, and who had provided this information. Information was also sought on the degree to which participants understood their health problems and why medical tests had been performed, as well as the extent to which they participated in decision-making regarding their care. These items were rated on a Likert-type scale: 1 (not at all), 2 (a little), and 3 (a lot). Participants were also asked to indicate how satisfied they were with discharge arrangements. This item was rated as follows: 1 (not at all satisfied), 2 (satisfied a little), and 3 (very satisfied). Finally, information was elicited on the degree of confidence about resuming normal daily functions and activities. Item response categories depicted the following range: 1 (very confident), 2 (a little confident), and 3 (not confident).

Involvement and information. With regard to involvement in discharge planning, less than half (48.3%) of study participants reported that they had been consulted by hospital personnel about discharge arrangements. When asked about the timing of discharge discussions, the majority (79.9%)

indicated that discharge discussions had been initiated only at or close to the time of discharge (see Table 8).

For those patients who required information on selected aspects of treatment protocols (i.e., medications, lifestyle modifications, expectations regarding recovery, and when and where to seek help if necessary), most reported that relevant information had been provided by either nurses or physicians. With regard to medications, the majority of patients received information on existing medications (58.9%), how and when to take new medications (76.3%) and possible side effects (55.6%). A small majority of participants also reported receiving information on necessary lifestyle changes (51.6%), and when (53.3%) and where (56.5%) to seek help. In contrast (see Table 8), most patients were not informed about what to expect during their recovery at home (53.0%) or about available community resources (75.5%).

With regard to health service requirements following discharge, almost half (49.6%) of the patients required post-discharge health services. The most common services needed by patients included nursing (41.4%), homemaking (4.8%), and either social work, occupational therapy or physiotherapy services (4.9%). Of the post-discharge services required, 80% were provided by a regional community health board and 20% by private agencies.

Table 8

Timing of Discharge Planning and Information Received During Hospitalization [1]

Variable	n	%
Discharge Planning:		
-Close to admission	11	3.0
-Mid-hospitalization	74	17.0
-Close to discharge	192	45.0
-Day of discharge	146	35.0
Existing medications		
Yes	202	58.9
No	141	41.1
New Medications		
Yes	222	76.3
No	69	23.7
Side Effects		
Yes	143	55.6
No	114	44.4
Lifestyle Changes		
Yes	198	51.6
No	186	48.4
Recovery at Home		
Yes	187	47.0
No	211	53.0
When to Seek Help		
Yes	215	53.3
No	118	46.7
Where to Seek Help		
Yes	227	56.5
No	175	43.5
Community Resources		
Yes	98	24.5
No	302	75.5

[1] Totals vary based on the amount of missing data for the different variables.

Health providers were asked if they helped patients learn about recovery at home, required lifestyle changes due to their condition, and whether they informed patients about when and where to seek help after discharge from hospital. A McNemar Test was used to compare matched pairs of providers and patients responses to these information questions (see Table 9). The findings indicate that health providers over-estimated the extent to which they had helped patients learn about what to expect during recovery at home ($X^2 = 24.45$, $p = .000$), and when and where to seek help during the recovery period ($X^2 = 19.44$, $p = .000$; $X^2 = 16.98$, $p = .000$; respectively).

Table 9

Patients' and Providers' Perceptions of Patients Receiving Recovery-Related Information (n=186)

Information	X^2	p
Lifestyle Changes	0.10	.749
Recovery at Home	24.45***	.000
When to Seek Help	19.44***	.000
Where to Seek Help	16.98***	.000
Potential Side Effects	0.78	.377

***$p<.001$

Understanding, confidence and participation. The mean scores for understanding health problems (M = 2.56, SD = .69) and medical tests (M = 2.65, SD = .69) indicated a high level of understanding; in fact, the majority of patients (66.7% and 71.3%, respectively) had a lot of understanding about these areas. The mean confidence score (M = 1.5, SD = .69) also indicated a high level of confidence and most patients (60.7%) felt very confident about resuming normal daily activities (the reader is reminded that lower scores reflect greater confidence) at discharge. In contrast, the mean score for participation in decision-making (M = 1.89, SD = .85) indicated a low level of participation; most patients had only a little (26.5%), or no (42.2%) involvement in decisions about their care.

Health-care providers were asked to indicate how they perceived patients' participation in decision-making about care, confidence in resuming normal activities at discharge, understanding of health problems, and the reasons for medical tests. A matched set of patients and providers responses (n = 186) to these questions was analyzed using the Wilcoxon Signed Ranks Test.

Providers' ratings of patients' participation in decision-making, understanding of health problems, and confidence in resuming normal activities at discharge were significantly higher than those reported by patients

(z = -8.06, p = .000; z = -3.48, p = .001; z = -3.40, p = .001; respectively). Table 10 presents a summary of these findings.

Satisfaction with hospitalization and discharge planning. The mean satisfaction score (M = 2.85, SD = .44) indicated a high level of satisfaction; most patients (96.6%) were satisfied or very satisfied with arrangements made for their return home. Only 3.4% of patients indicated that they were not at all satisfied with discharge arrangements.

Providers were also asked to indicate how they perceived their patients' satisfaction with discharge arrangements. Health providers' ratings were slightly higher than patients' own ratings of their satisfaction with discharge arrangements (see Table 10), but this difference was not statistically significant.

Table 10

Patients' and Providers' Perceptions of Patients' Participation, Satisfaction, Understanding, and Confidence

Variable (n)	Patients M_{rank}	Providers M_{rank}	z	p
Participation (n=174)	46.15	65.10	-8.06***	.000
Satisfaction (n=143)	14.00	19.00	-0.80	.426
Understanding (n=155)	20.50	26.80	-3.48**	.001
Confidence (n=179)	41.51	39.86	-3.40**	.001

**p<.01 ***p<.001

In the follow-up interview at two weeks post-discharge, participants were invited to comment on their overall satisfaction with health services received during their hospital stay. Descriptive comments by patients who were satisfied or very satisfied with health services contained frequent reference to the quality of care provided by hospital staff. The following represents a sample of these comments:

> The staff are a wonderful group of people and they go the extra mile for you.
>
> Couldn't wish for no better. Doctors and nurses were excellent.
>
> Nurses were the most compassionate and caring. I was totally satisfied with the care and services.

> Both my husband and I have been hospitalized twice in 1998. I have been impressed with the care we received, especially by nurses. I would like to think that care for problems of old age will be available for us.
>
> I was enormously impressed with the kindness of staff. I was totally helpless while in hospital and never once did I feel like I was a burden to the staff.
>
> Nurses are very busy and overworked. I wish to add that in these stressful times most of the nursing staff go out of their way to help and make themselves available to you.

With regard to sources of dissatisfaction, several patients attributed service quality problems to cutbacks in the health care system. The following comments illustrate these concerns:

> I didn't see the nurses as much as I would have liked to. I don't blame this on the staff but on the nature of the cutbacks in health care today.
>
> I had to wait a long time for elective surgery. How many patients who need more serious surgery then me have to wait longer? I think something needs to be done in this area.
>
> I was satisfied with the services but the personal touch of the health care system is gone because hospital staff are too busy.
>
> Unfortunately the small things which are of great importance are not there for patients anymore, such as a back rub before bedtime, and the little personal touches. This is not due to the lack of caring of the nursing staff, just a serious lack of nurses in general for the number of patients.
>
> The nurses seemed to be over worked. They did not have much time to stop and talk or tend to your needs.
>
> Nurses do not have enough time to do their nursing and talk with patients because of all the documentation they need to do.

Interrelationships Among Study Variables

This section explores the effect of key socio-demographic and illness-related variables on various discharge planning variables (i.e., understanding, participation, and confidence) and outcome measures (i.e., health and functional status) from patients' data base. Study findings are also presented on the relationships between discharge planning and health and functional status at three days and two weeks post-discharge. Finally, consideration is given to the intercorrelations among the outcome variables at each time period.

Socio-Demographic Characteristics

This section summarizes study findings on the effect of socio-demographic characteristics on discharge planning, and on health and functional status. The findings are summarized according to key socio-demographic variables. Pearson's r, t-tests, and analysis of variance were used for this portion of the analysis.

Age. Younger patients had greater understanding of their health problems (r = -.236, p = .000) and why tests were done (r = -.202, p = .000) and tended to participate more in decision-making about their care (r = -.187, p = .000) than older patients. There were no other significant correlations noted.

There were no significant correlations observed between age and health status recalled for the four weeks prior to hospitalization or at two weeks post-discharge. With regard to functional status, age demonstrated a statistically significant but weak positive correlation with mobility (r = .10, p = .03) and IADL (r = .10, p = .04) at three days after discharge. These findings suggest that older patients had more difficulty than younger patients with mobility functioning and performing IADL during the initial recovery period. At two weeks after discharge, age depicted a significant, positive correlation with communication (r = .11, p = .01) and IADL (r = .10, p = .02). These results suggest that older patients had more difficulty with communication and IADL at two weeks after discharge.

Gender. No significant differences were noted between male and female participants on any of the discharge planning variables (i.e., participation in decision-making, understanding about health problems and tests, satisfaction with discharge arrangements, confidence in resuming normal activities post-discharge). Ratings of health status recalled for the four week period prior to hospitalization indicated no significant differences between male and female participants for either physical (t =1.38, p = .167) or mental (t = -.70, p = .481) health (see Table 11).

Health status was also reassessed at two weeks following discharge from the hospital (see Table 12). Male participants reported better physical

health (M = 34.41, SD = 7.39) than female participants (M = 32.20, SD =7.40) at two weeks (t = 3.08, p =.002). However, female participants reported better mental health (M = 51.08, SD = 6.13) than male participants (M = 49.33, SD = 7.12) during the same time period (t = -2.73, p = .007).

The effects of gender on functional status indicators (i.e., ADL, IADL, communication and mobility) was investigated at three days and two weeks post-discharge (see Tables 11 and 12). Male participants reported more independence with mobility (M = 1.22, SD = .46) than female participants (M = 1.36, SD = .54) at three days after discharge (t = -2.74, p = .006). Comparatively, male participants continued to report greater independence with mobility (M = 1.16, SD = .38) than female participants (M = 1.31, SD = .49) at two weeks after discharge (t = -3.47, p = -.001). Male participants also reported more independence with IADL (M = 2.24, SD = .95) than female participants (M = 2.04, SD = .83) at two weeks post-discharge (t = 2.37, p = .01). There were no other statistically significant gender differences for functional status indicators at either three days or two weeks after discharge.

Table 11

Gender Differences in Health Status Recalled for the Four Weeks Prior to Hospitalization and Functional Status at Three Days Post-Discharge

Variable	Males M (SD)	Females M (SD)	t	p
Physical Health	35.59 (7.24)	34.57 (7.86)	1.38	.167
Mental Health	48.76 (7.94)	49.26 (7.94)	-0.70	.481
ADL	1.07 (.23)	1.08 (.22)	-3.44	.731
IADL	2.35 (.91)	2.19 (.86)	1.84	.065
Mobility	1.22 (.46)	1.36 (.54)	-2.74*	.006
Comm.	1.04 (.12)	1.04 (.13)	-.519	.604

Note: ADL=activities of daily living; IADL= instrumental activities of daily living; Comm.=communication.

*p<.05

Table 12

Gender Differences in Health and Functional Status at Two Weeks Post-Discharge

Variable	Males M (SD)	Females M (SD)	t	p
Physical Health	34.41 (7.39)	32.20 (7.40)	3.08**	.002
Mental Health	49.33 (7.12)	51.08 (6.13)	-2.73**	.007
ADL	1.06 (.19)	1.07 (.22)	-0.62	.533
IADL	2.24 (.95)	2.04 (.83)	2.37*	.018
Mobility	1.16 (.38)	1.31 (.49)	-3.47**	.001
Comm.	1.04 (.14)	1.03 (.11)	1.24	.213

Note: ADL= activities of daily living; IADL=instrumental activities of daily living; Comm.=communication.

*p<.05 **p< .01

Education. Level of education was collapsed into three meaningful divisions (i.e., less than high school, high school, and post secondary

education) to facilitate group comparisons. Patients with post-secondary education demonstrated greater understanding of health problems ($F = 3.33$, $p = .037$) and the reasons for medical tests ($F = 6.75$, $p = .001$) during their hospital stay than those with less than highschool education. Patients with highschool education also tended to participate more in decision-making about their care than those with less education ($F = 4.64$, $p = .010$). There were no significant group differences noted for satisfaction and confidence. There were also no significant group differences observed for health (i.e., physical and mental) or functional status (i.e., IADL, ADL, mobility, and communication) at any of the time periods.

Income. There was a large amount of missing data on this variable (i.e., 52% response rate). For the purpose of statistical analysis, income was collapsed into three meaningful divisions (i.e., <$25,000, $25,000 - $50,000, >$50,000). Patients with annual incomes over $50, 000 had greater understanding of their health problems than those with incomes less than $25, 000 ($F = 4.18$, $p = .017$). No significant group differences were observed for understanding of tests, participation in decision-making, satisfaction with discharge arrangements, or confidence in ability to resume usual activities.

With regard to health status, patients in the middle income group (i.e., $25,000 - $50,000) demonstrated significantly higher physical health scores

recalled for the four week period prior to hospitalization than those with lower (i.e., $25,000) or higher (i.e., >$50,000) incomes ($F = 6.11$, $p = .003$). No other group differences were noted for health status.

Few differences were also noted for functional status variables. Patients in the lower income bracket (i.e., less than $25,000) demonstrated significantly greater independence with mobility two weeks post hospital discharge than those with middle (i.e., $25,000 - $50,000) and higher (i.e., greater than $50,000) annual incomes ($F = 5.35$, $p = .005$).

Marital Status. No significant differences were observed in health status recalled for the four weeks prior to hospitalization or at two weeks post-discharge for individuals who were married or living common-law versus those who were either single, separated, divorced, or widowed.

The effect of marital status on functional status indicators was investigated at three days and two weeks post-discharge. Individuals who were married or living common law reported more independence with mobility ($t = -2.78$, $p = .001$) at two weeks following discharge than those who were single, divorced, separated or widowed. There were no other statistically significant marital status differences for functional status indicators for either time period.

Illness-Related Variables

This section summarizes study findings on the effect of illness-related variables on discharge planning, physical and mental health at two weeks post-discharge, and functional status at three days and two weeks post-discharge. Pearson's r, t-tests, and analysis of variance were used for this portion of the analysis. The findings are summarized according to illness-related variables (i.e., in-hospital health status based on a four week recall, and length of hospital stay).

Health status and discharge Planning. There were few statistically significant relationships observed between health status recalled for the four weeks prior to hospitalization and discharge planning variables (see Table 13). Physical and mental health failed to correlate significantly with either confidence in ability to resume usual activities, understanding health problems, understanding why medical tests were performed, or satisfaction with arrangements for discharge. However, mental (r = .09, p = .04) and physical (r = -.18, p = .000) health depicted low but significant correlations with extent of participation in decision-making. That is, patients with better mental health but poorer physical health tended to participate more in decision-making about their care.

Table 13

Correlations Among Health Status Scores Recalled for the Four Weeks Prior to Hospitalization and Discharge Planning Variables

Health Status	Confid r (p)	Particip. r (p)	U/Health r (p)	U/Tests r (p)	Satisf. r (p)
Physical Health	-.04 (.33)	-.18*** (.000)	.05 (.26)	-.02 (.62)	.04 (.20)
Mental Health	-.01 (.84)	.09* (.04)	.06 (.21)	.03 (.54)	-.06 (.20)

Note: P/DM=participation in decision-making, U/Health=understanding health problem; Satis=satisfaction; UTests=understanding tests Confid=confidence in ability to resume activities.

*p<.05 ***p<.001

Health status: Recalled for the four weeks prior to hospitalization and two weeks post-discharge. There were significant correlations observed between mental and physical health scores at both time periods (see Table 14). There was a low to moderate correlation (r = .33, p = .000) between physical health scores across time, and regression analysis indicated that 10.9% of the observed variance in physical health ratings at two weeks post-discharge was explained by physical health ratings recalled for the four weeks prior to hospitalization. Significant correlations were also observed

between physical health and mental health recalled for the four week period prior to hospitalization (r = -.53, p = .000), as well as between physical health recalled for the four weeks prior to hospitalization and mental health at two weeks post-discharge (r = -.18, p = .000). Regression analysis indicated that recalled physical health ratings prior to hospitalization accounted for 28.1% and 3.2% of the variance in mental health ratings recalled for the four weeks prior to hospitalization and at two-weeks post-discharge, respectively.

Comparatively, there was a moderate correlation (r = .40, p = .000) between mental health scores across time and 16% of the observed variance in mental health ratings at two weeks post-discharge was explained by mental health ratings recalled for the four weeks prior to hospitalization. Significant correlations were also observed between mental health for the four week recall period prior to hospitalization and physical health at two weeks post-discharge (r = -.25, p = .000), as well as between mental and physical health at two weeks post-discharge (r = -.46, p = .000). Mental health ratings recalled for the four weeks prior to hospitalization accounted for 5.8 and 21.2% of the variance in physical health and mental health ratings, respectively, at two-weeks post-discharge.

Table 14

Correlations Among Health Status Scores Recalled for Four Weeks Prior to Hospitalization and Two Weeks Post-discharge

Health	PH-T1	PH-T2	MH-T1	MH-T2
PH-T1	1.00	.33*** (.000)	-.53*** (.000)	-.18*** (.000)
PH-T2	–	1.00	-.25*** (.000)	-.46*** (.000)
MH-T1	–	–	1.00	.40*** (.000)
MH-T2	–	–	–	1.00

Note: PH=physical health; MH=mental health; T1=in-hospital (4-week recall period); T2=two weeks post-discharge

***p<.001

Health status and functional status. There were only a few statistically significant correlations observed between health status recalled for the four weeks prior to hospitalization and functional status at three days and two weeks after discharge. Study findings are summarized in Table 15. The reader is reminded that higher scores reflect better physical and mental health, whereas lower scores reflect greater functional independence.

Physical health demonstrated significant, negative associations with IADL (r = -.11, p = .01) and mobility (r = -.17, p = .000) at three days after discharge. These findings suggest that patients with higher physical health ratings recalled for the four week period prior to hospitalization had more independence with mobility and were better able to perform IADL. There were no significant correlations between mental health and any of the functional status variables at three days following hospital discharge.

At two weeks after discharge, a significant, negative correlation was observed between physical health and mobility (r = -.15, p = .000). In addition, physical health depicted a significant, positive correlation with IADL (r = .15, p = .000). These findings suggest that patients with higher physical health ratings recalled for the four weeks prior to hospitalization reported greater mobility but less independence with IADL at two weeks post-discharge. Finally, mental health demonstrated significant, negative correlations with ADL (r = -.13, p = .000). That is, patients who had better mental health ratings recalled for the four weeks prior to hospitalization were more likely to indicate greater independence with ADL at two weeks post-discharge.

Table 15

Relationship between Health Status Recalled for the Four Weeks Prior to Hospitalization and Functional Status 3 Days and 2 Weeks Post-Discharge

	3 Days Post-Discharge				2 Weeks Post-Discharge			
	ADL r (p)	IADL r (p)	Com. r (p)	Mob. r (p)	ADL r (p)	IADL r (p)	Com. r (p)	Mob. r (p)
PH	-.02 (.61)	-.11** (.01)	-.01 (.70)	-.17*** (.000)	-.00 (.46)	.15*** (.000)	-.01 (.83)	-.15*** (.000)
MH	.01 (.80)	.01 (.94)	.04 (.31)	-.02 (.66)	-.13*** (.000)	-.01 (.76)	-.07 (.13)	.04 (.33)

Note: ADL=activities of daily living; IADL=instrumental activities of daily living; Mob=mobility; Com=communication; PH=physical health; MH=mental health.

**$p<.01$ ***$p<.001$

Length of stay and discharge planning. Satisfaction with discharge arrangements, understanding of health problems and why tests were performed, and participation in decision-making about care did not vary with hospital length of stay. Patients who had longer hospital stays were more likely to have greater confidence about resuming normal activities ($t = -2.18$, $p = .029$) at discharge.

Length of stay and health status. Hospital length of stay depicted significant correlations with physical (r = -.10, p = .019) and mental (r = .08, p = .049) health status at two weeks following discharge. For the purposes of this study, it was important to ascertain the exact nature of these differences. The decision was made to do further analysis following the collapse of length of stay (range = 1 to 47 days) into meaningful divisions (i.e., $\leq$ 5 days and >5 days) congruent with the research literature.

Mental health scores for patients with a shorter length of stay (M = 50.37, SD = 6.96) did not differ significantly (t = .09, p =.92) from those with a longer length of stay (M = 50.15, SD = 6.6). Physical health scores for patients with a shorter length of stay (M = 33.85, SD = 7.51) also did not differ significantly (t = 1.20, p =.21) from those with a longer length of stay (M = 32.95, SD = 7.48).

With regard to the impact of length of stay on changes in physical and mental health scores recalled for the four week period prior to hospitalization to two weeks after discharge, no significant differences were observed in mental health scores over time for either the short or longer stay patients (t = -.17, p = .08; t = -.17, p = .08; respectively). Similar findings were observed for the physical health scores of short stay patients (t = 1.90, p = .06). The only significant differences observed over time were in the physical health scores for longer stay patients (t = -2.60, p = .01). That is, patients

hospitalized for longer periods of time experienced a significant decline in physical health status following hospitalization (see Tables 16 and 17).

Length of stay and functional status. The effect of hospital length of stay on functional status was also investigated in the current study. Length of stay was observed to correlate significantly with mobility and IADL at three days following hospital discharge (r = .17, p = .000; r = .19, p = .000; respectively). With the sample divided into short and long term stay, only mobility and IADL surfaced as being significant between the two groups. Mean mobility scores for patients with a shorter length of stay (M = 1.23, SD = .48) were significantly lower (t = -1.99, p = .047) than those for patients with a longer length of stay (M = 1.32, SD = .51). IADL scores for patients with a shorter length of stay (M = 2.10, SD = .88) were significantly lower (t = -3.02, p = .003) than for those patients with longer lengths of stay (M = 2.37, SD = .88). That is, longer stay patients reported less independence with mobility and IADL at three days following hospital discharge.

Table 16

Differences between Health Status Scores Recalled for Four Weeks Prior to Hospitalization and Functional Status Scores at 3 Days Post-Discharge and Health/Functional Status at 2 Weeks Post-Discharge for Short Stay (5 days or less) Patients

Variable	Time 1 M (SD)	Time 2 M (SD)	t	p
Mental Health	49.32 (7.17)	50.37 (6.96)	-0.17	.09
Physical Health	35.21 (7.53)	33.85 (7.51)	1.90	.06
IADL	2.10 (.88)	1.99 (.86)	2.15*	.03
ADL	1.06 (.19)	1.05 (.18)	0.97	.33
Mobility	1.23 (.48)	1.21 (.41)	1.09	.28
Comm.	1.05 (.13)	1.05 (.14)	.00	1.00

Note: IADL=instrumental activities of daily living, ADL=activities of daily living; Comm.=communication, Time 1=during hospital (4 week recall period), Time 2=2 weeks post-discharge.

*$p<.05$

Table 17

Differences between Health Status Scores Recalled for Four Weeks Prior to Hospitalization and Functional Status Scores at 3 Days Post-Discharge and Health/Functional Status at 2 Weeks and Post-Discharge for Long-Stay Patients (>5 days)

Variable	Time 1 M (SD)	Time 2 M (SD)	t	p
Mental Health	48.89 (7.53)	50.15 (6.60)	-0.17	.08
Physical Health	34.93 (7.60)	32.95 (7.48)	-2.60*	.01
IADL	2.37 (.88)	2.22 (.91)	4.37***	.000
ADL	1.09 (.25)	1.07 (.23)	1.24	.21
Mobility	1.32 (.51)	1.26 (.46)	2.72*	.01
Comm.	1.03 (.13)	1.03 (.12)	0.45	0.65

Note: IADL=instrumental activities of daily living, ADL=activities of daily living, Comm=Communication, Time 1=during hospital (4 week recall period), Time 2= 2 weeks post-discharge.

*p<.05 ***p<.001

At two weeks post-discharge, the only significant difference observed in functional status between short and long term stay patients was in IADL scores. Scores for IADL for patients with a shorter length of stay (M = 1.99, SD = .86) were significantly lower (t = -2.51, p = .01) than those for patients with a longer length of stay (M = 2.22, SD = .91) at two weeks after discharge. That is, longer stay patients continued to experience diminished IADL functioning at two weeks post-discharge.

The final step in the analysis was to identify any significant changes in functional status over time for short-term versus long-term stay patients (see Tables 16 and 17). With regard to short stay patients, IADL scores depicted a significant change over time (t = 2.15, p = .03). That is, IADL functioning improved for short stay patients between three days and two weeks post-discharge. For long term stay patients, statistically significant changes were observed in mobility (t = 2.72, p = .01) and IADL (t = 4.37, p = .000) scores over time. That is, mobility and IADL functioning improved for long-term stay patients between three days and two weeks post-discharge.

Discharge Planning and Health/Functional Status

Pearson's r was used to determine the intercorrelations among discharge planning variables (i.e., participation in decision-making, understanding about health problems and tests, satisfaction with discharge

arrangements, confidence in resuming normal activities post-discharge) and functional status variables (i.e., ADL, IADL, communication, and mobility). Consideration was also given to the effect of discharge planning on functional status at three days and two weeks post-discharge, and health status at two weeks post-discharge.

Intercorrelations among discharge planning variables. Several noteworthy associations were observed among the discharge planning variables (see Table 18). Greater participation in decision-making about care was significantly correlated with greater understanding of health problems (r = .23, p = .000) and reasons for medical tests (r = .30, p = .000). Patients with greater understanding of their health problems were also more likely to understand the reasons for medical tests (r = .45, p = .000). Further, patients who were more confident about resuming normal activities at discharge were more likely to be satisfied with the arrangements made for their return home (r = -.20, p = .000).

Table 18

Correlations Among Participation, Satisfaction, Understanding, Confidence at 3 Days Post-Discharge

Variable	P/DM r (p)	Satisf. r (p)	Confid. r (p)	U/Health r (p)	U/Tests r (p)
P/DM	1.00	.04 (.41)	-.08 (.10)	.23*** (.000)	.30*** (.000)
Satisf.	–	1.00	-.20*** (.000)	.10 (.07)	.08 (.15)
Confid.	–	–	1.00	-.01 (.78)	-.00 (.99)
U/Health	–	–	–	1.00	.45*** (.000)
U/Tests	–	–	–	–	1.00

Note: P/DM=participation in decision-making; Satisf.=satisfaction; U/Health=understanding health problems; U/Tests=understanding medical tests; Confid.=confidence in ability to resume normal activities at discharge.

***p<.001

Intercorrelations: Functional status at three days and two weeks post-discharge. The findings demonstrated consistent intercorrelations among the functional status variables at each time period (see Table 19). At three days and two weeks post-discharge, patients who reported greater

independence with ADL were also more likely to report greater independence with mobility (r = .42, p = .000; r = .39, p = .000; respectively) and IADL (r = .30, p = .000; r = .25, p = .000; respectively). Further, patients with better mobility functioning were more likely to report greater independence with IADL (r = .41, p = .000; r = .28 p = .000; respectively). Finally, patients with greater communication capabilities were more likely to report greater independence with IADL (r = .12, p = .01; r = .17, p = .000; respectively) .

Table 19

Intercorrelations Among Functional Status Variables at Three Days Post-Discharge and at Two Weeks Post-Discharge

	Three Days Post-Discharge				Two Weeks Post-Discharge			
Var.	ADL r (p)	Mob. r (p)	Com r (p)	IADL r (p)	ADL r (p)	Mob. r (p)	Com. r (p)	IADL r (p)
ADL	1.00	.42*** (000)	.04 (.40)	.30*** (.000)	1.00	.39*** (.000)	.12* (.02)	.25*** (.000)
Mob.	-	1.00	.01 (.87)	.41*** (.000)	-	1.00	.08 (.10)	.28*** (.000)
Com	-	-	1.00	.12** (.01)	-	-	1.00	.17*** (.000)
IADL	-	-	-	1.00	-	-	-	1.00

Note: ADL = activities of daily living; IADL = instrumental activities of daily living; Comm. = communication; Mob.= mobility.

*p<.05 **p<.01 ***p<.001

Correlations between functional status at three days and two weeks post-discharge. Several statistically significant associations were observed between functional status at three days and two weeks post-discharge (see Table 20). Patients reporting greater independence with ADL at three days were also more likely to report greater independence with ADL

(r = .66, p = .000), IADL (r = .25, p = .000), mobility (r = .39, p = .000), and communication (r = .14, p = .003) at two weeks. Further, patients with greater IADL functioning at three days were more likely to have greater ADL (r = .24, p = .000), IADL (r = .78, p = .000), mobility (r = .27, p = .000), and communication (r = .16, p = .001) functioning at two weeks. Patients with greater mobility functioning at three days were more likely to have greater independence with ADL (r = .47, p = .000), IADL (r = .39, p = .000), and mobility (r = .72, p = .000) at two weeks. Finally, those patients with greater communication capabilities at three days were also more likely to have greater independence with IADL (r = .14, p = .001) and communication (r = .43, p = .000) functioning at two weeks.

Table 20

Correlations Between Functional Status Variables at Three Days and Two Weeks Post-Discharge

Functional Status	ADL-T2 r (p)	IADL-T2 r (p)	Mob.-T2 r (p)	Com.-T2 r (p)
ADL-T1	-66*** (.000)	.25*** (.000)	.39*** (.000)	.14** (.003)
IADL-T1	.24*** (.000)	.78*** (.000)	.27*** (.000)	.16** (.001)
Mob.-T1	.47*** (.000)	.39*** (.000)	.72*** (.000)	.08 (.09)
Com.-T1	.038 (.43)	.14*** (.000)	.01 (.87)	.43*** (.000)

Note: ADL=activities of daily living; IADL=instrumental activities of daily living' Mob.=mobility; Com.=communication; T1=Three days post-discharge; T2=two weeks post discharge.

**p<.01 *** p<.001

Discharge planning and functional status. At three days following hospital discharge, few statistically significant correlations were observed between discharge planning and functional status variables (see Table 21). Patients who felt more confident with resuming normal activities demonstrated

more ADL (r = .10, p = .03) and IADL (r = .25, p =.00) independence early in the recovery period.

Table 21

Correlations Among Discharge Planning and Functional Status 3 Days Post-Discharge

Variable	Confid r (p)	P/DM r (p)	U/Tests r (p)	U/Health r (p)	Satis r (p)
ADL	.10* (.03)	.03 (.58)	.01 (.95)	.05 (.24)	-.01 (.88)
IADL	.25*** (.000)	-.08 (.08)	-.07 (.10)	-.01 (.81)	-.01 (.84)
Mobility	.16 (.06)	-.07 (.14)	-.01 (.87)	-.03 (.52)	-.02 (.63)
Comm.	.09 (.06)	-.07 (.14)	-.03 (.57)	-.03 (.50)	-.08 (.11)

Note: P/DM=participation in decision-making, Satis=satisfaction; U/Health=understanding health problems; U/Tests=understanding medical tests Confid=confidence with ability; ADL=activities of daily living; IADL= instrumental activities of daily living; Comm=communication.

*p<.05 ***p<.001

There was more evidence of significant relationships between discharge planning and functional status variables at two weeks following hospital discharge (see Table 22). Confidence with resuming normal activities

continued to depict a positive correlation with IADL (r = .23, p = .000). Confidence also depicted a significant, positive correlation with mobility (r = .14, p = .01). These results suggest that patients who were more confident in resuming normal activities reported greater mobility and IADL functioning.

Greater participation in decision-making about care during hospitalization was significantly associated with less communication problems (r = -.13, p = .007) and greater independence with IADL (r = -.13, p = .004) at two weeks post-discharge. In addition, patients with greater understanding of the reasons for medical tests were more likely to report greater independence with IADL (r = -.13, p = .004).

Discharge planning and health status at two weeks. The expected relationships between the discharge planning variables and health status at two weeks following hospital discharge received minimal support from this study's findings. No significant correlations were observed between participation in decision-making, satisfaction with discharge arrangements, understanding of health problems and either physical or mental health. Patients who were more confident in resuming normal activities reported better physical health (r = -.13, p = .000) at two weeks post-discharge. However, patients with greater understanding of the reasons for in-hospital tests were more likely to report poorer mental health (r = -.12, p = .02).

Table 22

Correlations Among Discharge Planning Variables and Functional/ Health Status Two Weeks Post-Discharge

Variable	U/Tests r (p)	P/DM r (p)	U/Health r (p)	Confid. r (p)	Satisf. r (p)
ADL	-.02 (.57)	.02 (.57)	.03 (.08)	-.01 (.80)	-.02 (.69)
Mob.	-.03 (.44)	-.06 (.16)	-.03 (.44)	.14** (.003)	-.05 (.31)
Comm.	-.04 (.36)	-.13** (.007)	-.06 (.16)	-.01 (.92)	-.05 (.35)
IADL	-.13** (.004)	-.13** (.004)	-.05 (.29)	.23*** (.000)	-.02 (.62)
Physical Health	-.04 (.42)	-.09 (.06)	-.01 (.84)	-.13*** (.000)	-.01 (.85)
Mental Health	-.12* (.02)	.05 (.30)	.05 (.32)	.03 (.60)	.06 (.26)

Note: P/DM=participation in decision-making, Satis=satisfaction, U/Health=understand health problem; U/Tests=understanding tests, Confid=confidence with ability, ADL=activities of daily living, IADL=instrumental activities of daily living, Comm=communication.

**p<.01 ***p<.001

Functional status at three days and health status at two weeks post-discharge. Physical health at two weeks post-discharge (see Table 23) was significantly and negatively correlated with mobility (r = -.18, p = .000) and IADL (r =-.12, p = .01) at three days post-discharge. That is, poorer

physical health was associated with greater dependence in mobility and IADL. There were no significant correlations between mental health and functional status during the same time period.

Table 23

Correlations Between Functional Status at 3 Days and Health Status at 2 Weeks Post-Discharge

Variable	ADL r (p)	Mobility r (p)	Comm. r (p)	IADL r (p)
Physical Health	-.02 (.62)	-.18*** (.000)	-.05 (.26)	-.12** (.01)
Mental Health	.01 (.81)	.05 (.31)	-.02 (.67)	.01 (.95)

Note: ADL- activities of daily living; Comm.=communication; IADL =instrumental activities of daily living.

**p<.01 ***p<.001

Health status and functional status at two weeks post-discharge.

Physical health depicted significant, negative correlations with mobility (r = -.15, p =.002) and IADL (r = -.15, p =.002) at two weeks post-discharge. These findings suggest that poorer physical health ratings were associated with greater dependence with mobility and IADL (see Table 24). Further, mental health demonstrated significant, negative correlations with ADL

(r = -.13, p =.002). That is, poorer mental health ratings were associated with greater dependence with ADL.

Table 24

Intercorrelations Between Health Status and Functional Status at Two Weeks Post-Discharge

Variable	ADL r (p)	Mobility r (p)	Comm. r (p)	IADL r (p)
Physical Health	-.00 (.95)	-.15** (.002)	-.01 (.83)	-.15** (.002)
Mental Health	-.13** (.002)	-.05 (.33)	-.07 (.13)	-.01 (.77)

Note: ADL=activities of daily living; Comm=communication, IADL = instrumental activities of daily living.

**p<.01

Predictors of Health Outcomes

Step-wise multiple regression was used to determine the predictors of mental and physical health outcomes at two weeks post-discharge. Regression analysis was also performed to identify the best predictors of functional status at two weeks (i.e., ADL, IADL, mobility, and communication).

Different combinations of variables were tried until the best regression model was found. The discharge planning variables were entered first as a

group, followed by the correlates (i.e., socio-demographic and illness-related), and finally the covariates of each dependent outcome variable. The presentation of findings is restricted to outcome variables that had two or more predictor variables in the regression equation.

Physical Health

Physical health at two weeks was significantly associated with physical and mental health recalled for the four week period prior to hospitalization, mental health at two weeks post-discharge, length of hospital stay, and functional status (i.e., ADL, IADL, mobility, communication). Only a limited number of discharge planning (i.e., confidence) and sociodemographic (i.e., gender) variables were associated with physical health at two weeks following hospital discharge. Table 25 summarizes the multiple regression results for the physical health model.

Current mental health entered the regression equation first ($F = 111.0$, $p = .000$), accounting for 21% of the observed variance in physical health at two weeks post-discharge. This variable was followed by physical health status recalled for four weeks prior to hospitalization at step two ($F = 79.08$, $p = .000$), mobility at two weeks post-discharge at step three ($F = 57.85$, $p = .000$), and level of confidence at step four ($F = 45.72$, $p = .000$) which accounted for 6.5%, 1.9%., and 1.2% of the explained variance, respectively.

Length of stay, gender, ADL, IADL, and communication failed to enter the regression equation.

Table 25

Stepwise Multiple Regression on Health Status at Two Weeks Following Discharge

Variable	R^2	Adjusted R^2	R^2 Change	F Value	p
Physical Health					
MH-T2	.210	.208	.210	110.95	.000
PH-T1	.275	.272	.065	79.08	.000
Mob-T2	.295	.290	.019	57.85	.000
Confid	.306	.300	.012	45.72	.000
Mental Health					
PH-T2	.213	.213	.213	112.71	.000
MH-T1	.298	.295	.085	88.38	.000
ADL-T2	.316	.311	.018	63.85	.000
PH-T1	.333	.327	.017	51.68	.000

Note: MH=mental health; PH=physical health; Confid=confidence; mob=mobility, ADL=activities of daily living; T1=during hospitalization (4-week recall period); T2=two weeks post-discharge.

Mental Health

Mental health at two weeks after discharge was significantly associated with physical and mental health recalled for the four weeks prior to hospitalization, physical health at two weeks post-discharge and length of

hospital stay. Only a limited number of functional status (i.e., communication at three days and ADL at two weeks), discharge planning (i.e., understanding of why medical tests were performed), and socio-demographic (i.e., gender) variables were associated with mental health at two weeks post-discharge. Table 25 summarizes the multiple regression results for the mental health model.

Physical health status at two weeks post-discharge entered the regression equation at step one ($F = 112.71$, $p = .000$), accounting for 21.3% of the explained variance. This variable was followed by mental health recalled for the four week period prior to hospitalization at step two ($F = 88.38$, $p = .000$), ADL functioning at two-weeks post-discharge at step three ($F = 63.85$, $p = .000$), and physical health recalled for four weeks prior to hospitalization at step four ($F = 51.68$, $p = .000$) which accounted for 8.5%, 1.8%, and 1.7% of the explained variance, respectively. Understanding of why medical tests were done, gender, length of hospital stay, and communication at three days failed to enter the regression equation.

Communication

Communication scores at two weeks following hospital discharge were significantly correlated with functional status indicators at three days (i.e., ADL, IADL, and communication) and two weeks (i.e., IADL). Only a limited number

of discharge planning (i.e., participation in decision-making) and socio-demographic (i.e., age) variables were associated with communication functioning at two weeks post-discharge. Table 26 summarizes the multiple regression results for the communication model.

Communication functioning at three days post-discharge entered the regression equation at step one ($F = 96.21$, $p = .000$), accounting for 18.5% of the explained variance in communication functioning at two weeks post-discharge. This variable was followed by ADL functioning at three days post-discharge at step two ($F = 53.09$, $p = .000$) and participation in decision-making at step three ($F = 37.62$, $p = .000$) which accounted for 1.6% and 1% of the explained variance, respectively. ADL and IADL functioning at three days, IADL functioning at two weeks post-discharge, and age failed to enter the regression equation.

Activities of Daily Living

ADL scores at two weeks post-discharge were significantly correlated with mental health recalled for four weeks prior to hospitalization and at two weeks after discharge, functional status indicators at three days (i.e., mobility, ADL, and IADL), and functional status indicators at two weeks post-discharge (i.e., mobility and IADL). Table 26 summarizes the multiple regression results for the ADL model.

Table 26

Stepwise Multiple Regression on Functional Status at Two Weeks Following Discharge

Variable	R^2	Adjusted R^2	R^2 Change	F Value	p
Communication					
Comm-T1	.185	.183	.185	96.21	.000
ADL-T1	.201	.197	.016	53.09	.000
P/DM	.211	.205	.010	37.62	.000
Activities of Daily Living					
ADL-T1	.429	.428	.429	316.16	.000
Mob-T1	.478	.476	.049	192.31	.000
Confid	.491	.488	.013	134.82	.000
Instrumental Activities of Daily Living					
IADL-T1	.604	.603	.604	640.70	.000
Mob-T1	.610	.608	.006	327.84	.000
Mobility					
Mob-T1	.535	.532	.535	253.77	.000
ADL-T1	.549	.544	.014	133.65	.000
Confid	.556	.550	.008	91.59	.000
Income	.565	.557	.008	70.76	.000

Note: MH=mental health; PH=physical health; Confid=confidence; mob=mobility; ADL=activities of daily living; IADL=instrumental activities of daily living; T1=during hospitalization (4-week recall period); T2=two weeks after discharge.

ADL functioning at three days post-discharge entered the regression equation at step one ($F = 316.18$, $p = .000$), accounting for 42.9% of the explained variance in ADL functioning at two weeks post-discharge. This variable was followed by mobility functioning at three days post-discharge at step two ($F = 192.31$, $p = .000$) and confidence in resuming normal activities at step three ($F = 134.82$, $p = .000$) which accounted for 4.9% and 1.3% of the explained variance, respectively. Length of stay, physical and mental health for the four weeks prior to hospitalization, IADL and gender did not enter the regression model.

Instrumental Activities of Daily Living

IADL scores at two weeks post-discharge were significantly associated with physical health for the four week period prior to hospitalization and at two weeks post-discharge, length of hospital stay, functional status indicators at three days post-discharge (i.e., IADL, ADL, mobility, and communication), functional status indicators at two weeks (i.e., mobility and communication), and discharge planning variables (i.e., understanding why medical tests were done, participation in decision-making, and confidence in abilities). Two socio-demographic variables (i.e., gender and age) were also associated with IADL functioning at two weeks after discharge.

IADL functioning at three days post-discharge entered the regression equation at step one (F = 640.70, p = .000), accounting for 60.4% of the explained variance in IADL functioning at two weeks post-discharge (see Table 26). This variable was followed by mobility functioning at three days post-discharge at step two (F = 327.84, p = .000) which accounted for an additional .6% of the explained variance. Length of stay, physical health recalled for four weeks prior to hospitalization and at two weeks post-discharge, gender, age, discharge planning variables (i.e., understanding why medical tests were done, participation in decision-making, and confidence in abilities), ADL, and communication failed to enter the regression equation.

Mobility

Mobility scores at two weeks post-discharge were significantly associated with one discharge planning variable (i.e, confidence in abilities), illness-related (i.e., hospital length of stay and physical health for the four weeks prior to hospitalization) and socio-demographic (i.e., age, gender, and income) variables, functional status indicators (i.e., ADL, mobility, and IADL) at three days post-discharge, and covariates at two weeks post-discharge (i.e., physical health, ADL, and IADL). Table 26 summarizes the regression results for the mobility model.

Mobility functioning at three days post-discharge entered the equation at step one ($F = 253.77$, $p = .000$), accounting for 53.5% of the explained variance in mobility functioning at two weeks post-discharge. ADL functioning at three days post-discharge entered the equation at step two ($F = 133.65$, $p = .000$) to account for an additional 1.4% of the explained variance. These variables were followed by confidence in resuming normal activities at step three ($F = 91.59$, $p = .000$) and income at step four ($F = 70.76$, $p = .000$), each accounting for a further .8% of the explained variance. Length of stay, understanding of reasons for medical tests, pre-hospitalization and two week post-discharge physical health, gender, and age did not enter the regression equation.

Summary

Most patients rated their overall health as good or excellent for the four week period prior to hospitalization and at two weeks following hospital discharge. Physical health ratings were generally lower than those for mental health at both time periods, with most patients reporting a decline in physical health but an improvement in mental health over time. Socio-demographic factors (gender, income) and length of hospital stay were found to have a minimal effect on health status, with physical health more likely to be affected than mental health. There was also little support found for the influence of discharge planning on physical or mental health status at two weeks post-

discharge. Significantly, mental health status at two weeks post-discharge surfaced as the most significant predictor of physical health during regression analysis; and, physical health status at two weeks post-discharge surfaced as the most significant predictor of mental health.

Study findings also indicated that patients experienced more limitations with IADL and mobility functioning than with communication and ADL at three-days and two-weeks following discharge from the hospital. Significant improvements were noted in IADL and mobility functioning between the two time periods. Socio-demographic factors (age, gender, income) were found to have a minimal influence on functional status (mobility, IADL). Length of hospital stay, discharge planning (confidence, participation), and physical health status were also more likely to be associated with mobility and IADL functioning than ADL and communication functioning at three days and two weeks after hospital discharge. During regression analysis, previous functional status indicators (ADL, IADL, mobility, communication) surfaced as the most significant predictors of their counterparts at two weeks post-discharge.

CHAPTER 5

Discussion

The Medical Outcomes Study (MOS) framework (Tarlov et al., 1989) provided the conceptual framework for this study. Tarlov et al. postulate that the structure (i.e., the system, patient and provider characteristics) and the process of care (i.e., technical and interpersonal) have a direct effect on health outcomes (i.e., clinical endpoints, functional status, general well-being, and satisfaction with care). The discussion of findings is presented in relation to the major premises of this model.

The modified MOS framework used in the current study proposes that patient characteristics, illness-related variables, and selected aspects of discharge planning have a direct effect on outcomes (i.e., health and functional status, illness symptoms, satisfaction). The current study investigated patient characteristics (i.e., age, gender, marital status, income, education), illness-related variables (i.e., length of hospital stay), physical and mental health, discharge planning (i.e., participation in decision-making, understanding health problems and reasons for medical tests, confidence in resuming normal activities at discharge), and functional status (i.e., activities of daily living, instrumental activities of daily living, mobility, communication),

illness symptoms (e.g., pain, insomnia, tiredness/weakness), and satisfaction with discharge planning and overall hospital experience. With regard to outcome measures, the analysis was restricted to identifying the strongest correlates and predictors of health and functional status at two weeks post-discharge.

Recovery-Related Outcomes

One of the research questions in this study investigated the health status of patients aged 55 and older during hospitalization (i.e., four week recall period) and at two weeks post-discharge. A second question examined perceived changes in physical/mental health status between these two time periods. In addition, there were several research questions that investigated patients' perceptions of functional status (i.e., activities of daily living, mobility, instrumental activities of daily living, and communication) and illness symptoms during the recovery period (i.e., three days and two weeks following hospitalization), as well as changes in functional levels and symptom frequency over time.

Health Status

Most patients rated their general health, recalled for the four week period prior to hospitalization and at two weeks post-discharge, as good to excellent. Study findings also indicate that patients' perceptions of their overall health improved significantly over time. Similar findings were reported by Grainger (1997) for a sample of angioplasty patients who were followed from early hospitalization to either seven or eight weeks post-discharge. Petrie, Chamberlain, and Azariah (1994) also found that older patients who had hip replacement surgery reported significant improvements in overall health from hospitalization to three days and six to eight weeks following discharge. In contrast, Kim, Wolde-Tsadik, and Ruben (1997) found that older patients (i.e., 65 years and older) hospitalized for a variety of physical and mental health problems, rated their overall health significantly lower at three months following discharge.

In the current study, most patients rated their physical health, recalled for the four week period prior to hospitalization, much lower than their mental health for both time periods. Comparable findings were reported by Rowe et al. (1997) in a sample of medical/surgical and cardiac short-stay (i.e., 1 to 5 days) patients. In contrast to the current study's findings and those of Rowe et al., the SF-12 normative values obtained for the general U.S. population

indicate that the mean scores for physical and mental health status are approximately equal (Ware, Kosinski, & Keller, 1995). However, SF-12 scores from studies focusing on patients with chronic physical conditions of varying severity (i.e., hypertension, congestive heart failure, and Type II diabetes) suggest that physical health mean scores tend to be lower than those for mental health (Ware et al., 1995; Ware et al., 1996).

In the current study, overall physical health scores evidenced a significant decline from the initial ratings (recalled for the four week period prior to hospitalization) to two weeks post discharge (i.e., one week recall period). Conversely, there was a significant improvement in overall mental health scores over the same time period. Only a few studies were identified from the literature that monitored changes in both physical and mental health status from hospitalization to the post-hospital recovery period. Similar to the current study's findings, Rowe et al. (1997) found that physical health scores declined and mental health scores improved over time for short-stay patients, but the observed differences failed to achieve statistical significance. Jenkinson et al. (1997) reported a decline in both physical and mental health scores for a group of patients (i.e., aged 28 to 68 years) four weeks following surgery for inguinal hernia, but no appreciable score changes for elderly patients (i.e., >60 years) with congestive heart failure after four weeks of ACE

inhibitor therapy.

A number of studies have focused on either physical or mental health changes from pre-hospitalization to the post-discharge period. In a sample of elderly patients hospitalized for total hip replacement surgery, MacWilliam et al. (1996) reported a slight improvement in physical health from the pre-operative period to six weeks follow-up. In contrast, several researchers, using a variety of instruments to measure health status, reported diminished physical health in the post-hospital recovery period for older medical/surgical patients (Keeling & Dennison, 1995; McIntosh & Worley, 1994; Mistiaen et al., 1997; Naylor, 1990; Tierney, 1994; White & Frasure, 1995. Petrie et al. (1994) found that the psychological well-being of older surgical patients significantly increased from in-hospital to 6 to 8 weeks post-discharge. In contrast, Kim et al. (1997) found that the mental health ratings of older patients evidenced a slight but significant decline from in-hospital to three months post-discharge.

Current study findings on variations in physical and mental health scores could be attributed to a number of factors. First, all of the patients were admitted to hospital for physical and not mental health problems. Second, patients' initial mental health ratings may have been associated with their physical condition and their uncertainty regarding hospitalization and the

effectiveness of medical treatment, and may be one explanation for the observed improvement in mental health scores following hospital discharge. Finally, the decline in patients' physical health during the two week recovery period may be expected for those who were classified as either emergent or urgent at admission and had variant diagnoses, illness severity, and prognosis. It is also possible that premature discharge or lack of adequate care following hospitalization may have contributed to the decline in physical health status.

Functional Status

Study findings indicated that patients were experiencing more difficulties with IADL and mobility functioning than with communication and ADL at three days and two weeks post-discharge. Comparable findings were reported by Rowe et al. (1997) for similar time periods.

In the current study, significant improvements were noted in IADL and mobility functioning from three days to two weeks post-discharge. These findings concur with those reported by Rowe et al. (1997). Similarly, Styrborn, et al. (1994), in a study of outcomes of geriatric discharge planning, found that most patients retained or enhanced their ADL functions during the first month of recovery at home. Improvements in functioning were also reported by Rubenstein (1988) and McCusker (1989).

Most of the studies identified in the literature monitored changes in functional status from in-hospital to different times in the discharge recovery period. For example, several researchers (e.g., Jones et al., 1989; Kim et al., 1997; Mamon et al., 1992; Mistiaen et al., 1997; Tierney, 1994) found evidence of deterioration in ADL and IADL functioning for older medical and surgical patients following hospital discharge.

Illness Symptoms

Study findings suggest that most patients experienced one to two illness symptoms in the post-hospital recovery period. For both the current and Rowe et al. (1997) studies, tiredness/weakness and pain were the most frequently occurring symptoms at three days and two weeks post-discharge. In a study of medical-surgical elderly patients, Mistiaen et al. (1997) found that reduced energy levels, presence of pain, and insomnia, were the most common physical complaints one week after hospital discharge.

Comparatively, the average number of symptoms experienced by patients at three days and two weeks in the current study ($\underline{M}$ = 1.85, 1.80; respectively) were lower than symptom averages ($\underline{M}$ = 2.64, 2.22; respectively) reported by Rowe et al. (1997). Specifically, the average number of illness symptoms decreased over time but failed to achieve statistical

significance in both the current and Rowe et al. studies.

Satisfaction

The current study explored patients' overall satisfaction with health services received during hospitalization. Many patients expressed a great deal of satisfaction with their hospital experience. Similar findings have been reported by other researchers (Hall et al. 1990; Hall et al.,1993; Pontin & Webb, 1996; Rowe et al., 1997; Simon et al., 1995; Stuen & Monk, 1991). When comments of dissatisfaction were made by patients in the current study, they were attributed to cutbacks in the health care system. Patients seemed to understand the limitations placed on care-providers in the hospital setting. It may be that patients were satisfied with "making do" given their perception that health-care professionals were doing their best to provide basic care under difficult circumstances.

Discharge Planning and Outcome Status

Another research question in the current study investigated patients' discharge planning experiences during hospitalization. Special emphasis was placed on perceptions about participation in decision-making, understanding of health problems and reasons for medical tests, confidence in resuming

normal activities, and satisfaction with discharge arrangements. Besides documenting patients' experiences with discharge planning, a primary purpose of this study was to investigate the impact of these experiences on perceived health and functional status at two weeks into the post-hospital recovery period.

Discharge Planning

Most patients in this study felt very confident about resuming usual daily activities, had a great deal of understanding about their health problems and reasons for medical tests during hospitalization, and were very satisfied about arrangements made for their return home. In contrast, the majority of patients indicated that they had limited or no involvement in decisions about their care. In addition, patients who had increased understanding of health problems and reasons for medical tests also had greater participation decision-making about care. Rowe et al. (1997) reported comparable findings for the same discharge planning variables.

Of particular concern is the current study's findings regarding the large number of patients who did not receive information on treatment protocols and other health-care requirements for the post-discharge period (i.e., lifestyle changes, or when and where to seek help) during hospitalization. Other

researchers (e.g., Boyle, Nance & Passau-Buck, 1992; Bubela et al., 1990; Caulkins et al., 1997; Charles et al., 1994; Cleary, et al., 1991; Haug, 1994; Mistiaen et al., 1997) also found that patients did not receive important recovery-related information during discharge planning. An analysis of the relationship between information received by patients and health outcomes will be conducted in the larger project.

Discharge Planning: Health Providers vs. Patients

Hospital health-care providers were asked to rate their patients' experiences with discharge planning. Similar to other researchers (Clemens, 1994; Farrell, 1991; Lauer et al., 1982; Reiley et al., 1996), this study's findings suggest that there are major differences in how patients and health-care providers perceive patients' hospital experiences. In the current study, providers over-estimated patients' understanding of health problems and reasons for medical tests, participation in decision-making, confidence in resuming normal activities at discharge, and satisfaction with discharge arrangements. Other study findings also support the observation that health-care providers tend to over-estimate patients' levels of participation in decisions about their care, as well as their confidence about resuming normal activities post-discharge (Calkins et al., 1997; Clemens, 1994; Reiley et al.,

1996; Rowe et al., 1997).

In the current study, providers believed that patients had received more information about what to expect during recovery at home, as well as when and where to seek help, than was reported by patients. The high degree of provider over-estimation of recovery-related information received by patients concurs with the findings of recent research studies (Calkins et al., 1997; Fernsler, 1986; Rowe et al., 1997). Calkins et al., in a study of patient-physician communication at hospital discharge and patients' understanding of the post-discharge treatment plan, found that physicians reported spending more time discussing post-discharge care than was reported by patients. Physicians also significantly over-estimated the number of patients who understood the side effects of their medications and when to resume normal activities.

These differences in provider-patient perceptions may be due to ineffective communication among health-care providers and/or between providers and patients. The timing of information sharing could also be a factor. Over one-third of patients in the current study reported that discharge arrangements were discussed on the day of discharge, which may indicate that providers may have not had sufficient time to fully prepare patients for the recovery period. As well, health-care providers may have made inaccurate

assumptions about patients' ability to understand and retain information.

Discharge Planning and Health/Functional Status

Study findings provide minimal support for the assumption that discharge planning has a direct effect on health and functional status outcomes. In contrast, other researchers (e.g., Charles, et al., 1994; Cleary et al., 1991; Fallowfield et al., 1990; Kaplan et al., 1989; Ong et al., 1995) found that information-giving by health providers to promote patients' understanding correlated with better physical health status. Further investigation using path analysis will be required to determine if there are indirect relationships between discharge planning indicators and health/functional status outcomes.

High levels of confidence in one's ability to resume usual activities after discharge was associated with better physical health, as well as improved IADL and mobility functioning. Few studies were identified from the literature that correlated confidence levels with health and functional status outcomes. In a study of patients with chronic back pain, Haerkaepaeae (1997) found that greater optimism was associated with better functional capacity. In contrast to the current study's findings, some researchers (e.g., King et al., 1998; Scheier et al., 1989) found that greater optimism was associated with better

psychological well-being for patients who had coronary artery by-pass (CABG) surgery. Inconsistent findings have been reported in the literature on the significance of the relationship between optimism and functional ability in CABG patients (King et al., 1998; Scheier et al., 1989).

In the current study, no significant correlations were observed between satisfaction and either health or functional status at two weeks post-discharge. Comparable findings were reported by Cleary et al. (1989), Hall and Dornan (1993), and Rowe et al. (1997). In contrast, Haddock (1990), found a significant and positive correlation between patient satisfaction and discharge planning.

In addition, there was no significant correlation between participation in decision-making and either physical or mental health at two weeks post-discharge. This finding is consistent with those of Beisecker and Beisecker (1990) who found that outpatients suffering from a variety of ailments wanted to be well-informed but preferred that decisions about treatment be made by their physicians. In contrast, other researchers (e.g., Clemens, 1994; Coulton et al., 1988; Fallowfield et al., 1990; Greenfield et al., 1988; Kaplan et al., 1989, 1995) have reported significant relationships between participation in decision-making about care and improvements in physical health.

In a review of the research literature, Guadagnoli and Ward (1998)

concluded that the benefits of patient participation in decision-making have not been clearly demonstrated due to methodological problems (e.g., small sample sizes, lack of control for potential confounding variables, short follow-up periods). Another potentially confounding factor is illness severity during hospitalization. That is, patients who have greater illness severity may not feel well enough to participate in decisions about their care. Degner & Sloan (1992), in a large survey which investigated the roles patients want in selecting cancer treatments, found that 59% of study participants wanted physicians to make treatment decisions on their behalf. This perspective is also supported by the findings of Biley (1992), and Muetzel, 1988.

It may well be that some patients prefer that health-care providers assume responsibility for decisions about treatment. It is also possible that patients with longer lengths of stay, like many of the patients in this study, develop a greater dependency on health-care providers. Regardless of the reasons for non-participation in decision-making, the findings from this study emphasize the importance of assessing and monitoring the extent of involvement patients want in decision-making about care, as well as ensuring that patient needs and preferences regarding care are accommodated.

Illness-Related Variables and Outcome Status

Illness-related variables (i.e., previous health status and length of hospital stay) were examined for their effect on health (i.e., physical and mental) and functional status (i.e., IADL, mobility, ADL, and communication) at two weeks post-discharge. Study findings provide some support for the assumption that previous health status has a direct effect on health and functional status outcomes in the post-hospital recovery period. There was less support for the assumption that hospital length of stay has a direct effect on health and functional status outcomes in the recovery period.

Previous Health and Health/Functional Status Outcomes

Health status, recalled for the four weeks prior to hospitalization, was significantly correlated with health outcomes at two weeks post-discharge. Physical health ratings, recalled for the four week period prior to hospitalization, accounted for a greater proportion of the explained variance in physical health than in mental health status at two weeks post-discharge (i.e., 10.9% and 3.2%, respectively). As well, mental health ratings, recalled for the four week period prior to hospitalization, accounted for a greater proportion of the explained variance in mental health than in physical health status at two weeks post-discharge (i.e., 16% and 5.8%, respectively). The low

percent of explained variance suggests that there are other factors influencing the perceived changes in physical and mental health status.

Few studies were identified from the literature that focused on correlations among physical and mental health status over time (i.e., pre-hospitalization versus post-discharge ratings). The findings reported by Rowe et al. (1997) were similar to those in the current study. MacWilliam et al. (1996) found that pre-perative physical health status was significantly associated with physical health status post-discharge (i.e., six weeks to six months).

Patients with higher physical health ratings for the four week period prior to hospitalization also reported greater mobility but less independence with IADL at two weeks post-discharge. In addition, patients who had better mental health ratings for the four week period prior to hospitalization were more likely to report greater ADL functioning at two weeks post-discharge. The percent of variance in IADL and mobility functioning accounted for by physical health ratings (i.e., 2.3% and 2.3%), as well as in ADL functioning by mental health ratings (i.e., 1.7%), suggest that previous health status has a minimal effect on functional status.

Few studies were identified from the literature that specifically examined the effect of prior physical and mental health status on functional

outcomes. In a longitudinal study of elderly people with chronic physical conditions, Idler & Kasl (1995) reported that higher health ratings at baseline were significantly associated with improvements in functional ability over time (i.e., 1 to 6 years), even when the analysis controlled for the confounding effects of illness severity and extent of disability. Wells et al. (1989) found a strong correlation between mental health and physical functioning in a large sample (N=11,242) of depressed outpatients (i.e., aged 30 years and older) from the Medical Outcomes Study.

Length of Stay and Health/Functional Status Outcomes

Study findings indicate that patients with longer hospital stays (i.e., >5 days) reported poorer physical but better mental health at two weeks post-discharge than those with shorter stays (i.e., ≤5 days). With regard to functional status, patients with a longer length of stay reported less independence with mobility and IADL functioning at two weeks post-discharge than short stay patients.

Socio-Demographic Variables and Outcome Status

Study findings provide minimal support for the assumption that patient characteristics affect health and functional status in the post-hospital recovery

period. Health status ratings at two weeks post-discharge varied for gender and income but not for age, marital status, education, or income. Comparatively, the general US population norms depict a decline in physical health scores with age (i.e., highest in the 55-64 age group to lowest in the 75^{+} age group) versus fairly equal mental health scores across these age groups (Ware et al., 1995).

In the current study, male patients reported better physical but poorer mental health than their female counterparts. Comparatively, the SF-12 norms for the general US population are significantly higher for both males and females than current study values (Ware et al., 1995). In addition, males from the general US population rated both their mental and physical health slightly higher than females. In contrast to the current study's findings, Petrie et al. (1994) and Kim et al. (1997) found that males rated their mental health higher than females six to eight weeks post-discharge.

A number of socio-demographic variables were found to influence functional status at two weeks post-discharge. Older patients reported more difficulty with communication and IADL functioning than younger patients. Other researchers (e.g., Mamon et al., 1992; Mistiaen et al., 1997) also found that older patients tended to report greater difficulty with IADL functioning than younger patients in the post-hospital recovery period. In the current

study, male patients reported more independence with mobility and IADL functioning than their female counterparts, and patients with lower annual incomes (i.e., < $25,000) reported greater independence with mobility than those with middle (i.e., $25,000 - $50,000) or higher (i.e., >$50,000) incomes. No studies were identified from the literature that addressed the impact of income or gender on variations in functional status following hospital discharge.

Predictors of Health/Functional Outcomes

A primary purpose of this study was to identify which components of the modified MOS framework correlated most strongly with health/functional status outcomes at two weeks post-discharge. During data analysis, consideration was given to the interactions among predictor variables in selecting the best combination of independent or predictor variables to use during regression analysis.

Interactive Effects

There was minimal interaction between socio-demographic characteristics and illness-related variables. Health status recalled for the four week period prior to hospitalization did not vary by age, marital status,

gender, or education. Patients in the middle income group ($25,000-$50,000) had higher physical health scores than those in lower and higher income groups. Other researchers (Charles et al.,1994; Cleary et al., 1991; Idler & Kasl, 1995) also report significant correlations among age, gender, marital status, education and health status following discharge.

Socio-demographic variables were observed to exert variant effects on discharge planning variables. Study findings indicate that older patients had less understanding of health problems and the reasons for medical tests, and participated less in decision-making about care, than younger patients. Patients with post-secondary education had greater understanding of health problems and the reasons for medical tests than those with less than high-school education; and patients with high-school education participated more in decision-making than those with less education. In addition, patients with higher incomes had greater understanding of their health problems than those with lower incomes. Kaplan et al. (1995) found that elderly patients (i.e., >75 years), males, and those with high-school education or less, participated less in decision-making about their care than those who were younger, with higher education and female. While similar results were reported by Rowe et al. (1997), there are inconsistent findings in the literature regarding the extent to which socio-demographic variables affect discharge

planning (Charles et al., 1994; Cleary et al., 1991; Naylor, 1990).

Study findings provide minimal support for relationships between illness-related (i.e., mental and physical health during hospitalization based on recall for four weeks prior to hospitalization, and length of stay) and discharge planning variables. Patients with better mental health but poorer physical health tended to participate more in decision-making about their care. Further, long-stay patients reported greater confidence in resuming usual activities than short-stay patients. Charles et al. (1994) and Cleary et al. (1991) found that patients with more health problems also experienced problems with discharge planning.

There were strong associations between functional status variables at three days post-discharge and at two weeks post-discharge. Patients who reported greater independence with ADL and IADL at three days post-discharge were also more independent in ADL, IADL, mobility, and communication at two weeks post-discharge. Patients who reported greater independence in mobility were also more independent in ADL, IADL and mobility at two weeks. Patients who reported greater independence in communication at three days were also more independent in IADL and communication at two weeks post-discharge. Comparatively, Guadagnoli & Cleary (1995) and Kim et al. (1997) found strong associations between ADL

and IADL in studies of older (i.e., >60 years) hospitalized medical patients following discharge.

Predictors of Health Status

The strongest predictors of change in physical health at two weeks post-discharge were mental health at the same time period (20.8% of variance) and previous physical health (6.5% of variance). The strongest predictors of mental health at two weeks post-discharge were physical health at the same time period (accounting for 21.3% of the variance) and previous mental health (8.5%). Kim et al. (1997) in a cross-sectional study of perceived health in hospitalized older patients found that mental health and IADL were significant predictors of perceived physical health. Reuben (1992) in a longitudinal prospective follow-up study also found mental health to be a significant predictor of perceived physical health. Similar findings were reported by Barsky et al. (1992) in a study of medical outpatients.

Predictors of Functional Status

A large proportion of the variance in each of the functional status variables at two weeks post-discharge was explained by previous functional status at 3 days post-discharge. That is, ADL, communication, mobility, and

IADL scores at three days explained 42.9%, 18.5%, 53.5% and 60.4% of the change in ADL, communication, mobility and IADL scores at two weeks, respectively. Comparatively, Kim et al. (1997) found ADL and IADL scores during hospitalization were significant predictors of functional status in older (i.e., >65 years) medical/surgical patients (N=1,899) during a 3 month follow-up period. McWilliam et al. (1996) also found that pre-operative functional status scores were significant predictors of post-operative functional status in a sample of patients who had total hip replacement surgery.

Implications for the Modified MOS Framework

Data from the current study provided partial support for some of the major assumptions of the modified MOS framework. It was postulated that socio-demographic characteristics (i.e., age, income, education, gender), illness-related variables (i.e., physical and mental health, length of hospital stay), discharge planning indicators (i.e., participation, understanding, confidence, satisfaction), and functional status at three days post-discharge influenced observed changes in health and functional status at two weeks post-discharge. Study findings indicated some support for the influence of previous health on health status at two weeks.

The strongest predictors of health status at two weeks post-discharge

were the covariates of mental and physical health. Specifically, the strongest predictor of mental health at two weeks was physical health at the same time period, and the strongest predictor of physical health at two weeks was mental health at the same time period. This provides support for the assumption that physical and mental health are separate entities but are still related (Ware & Davies, 1992).

The current study did not examine indirect relationships between socio-demographics, illness-related variables (i.e., diagnosis), discharge planning and health and functional status outcomes. Further investigation using path analysis will be required to determine the indirect effects of these variables on health and functional status outcomes.

The findings from this study provide new information about health outcomes. There was partial support for the model which served as the conceptual framework. This may be due to limitations with some of the variables selected for measurement (i.e., discharge planning variables). The variables of participation, confidence, and understanding were single-item questions, and may have failed to capture the full essence of the discharge planning experience.

Another reason for limited support of the modified MOS conceptual framework could be the illness-related characteristics of the patients in this

study. Unlike patients from the Rowe et al. (1997) study, which used a similar conceptual framework, patients in the current study appear to have greater illness severity and many had three times the length of stay in hospital, than patients in the Rowe et al. study. Further analysis is required to determine the relationship between diagnosis/illness severity and health status outcomes.

The lack of relevant recovery-related information received by a proportion of study participants may have impacted patients' understanding, participation and confidence. Without adequate information, it is possible that patients were unable to participate in decisions about their care, which may in turn, have contributed to poorer health outcomes.

The current study was designed to measure patients' perceptions of their own health and functional status. There were no objective measures used in this study, such as clinical tests or laboratory results, to validate responses. Therefore, the issue of self-reporting must be considered. This method of data collection has been criticized with regard to validity and accuracy (Polit & Hungler, 1995). Ideally, utilizing both patient reports and objective clinical measures would be optimal. The limitations of using a four week recall period for the initial measure of health status with an older population must also be acknowledged and may have influenced the findings in relation to the study's conceptual framework.

The current study promoted the use of patient-generated data and focused attention on those aspects of care that patients have identified to be important. If hospital personnel were to regularly collect this type of data, health-care providers would have focused and useful information about areas in which care excelled and areas in which improvement is needed.

Further research is needed to fully understand how health care delivery affects the quality of hospital care from patients' perspectives. The findings from this study suggest that there is potential for improvement in hospital-based care. If hospital personnel are attentive to the information reported here, they will be able to improve aspects of care that may not be captured in traditional quality assessment methods.

Summary

The purpose of this study was to explore the relationships between discharge planning, illness-related variables, socio-demographic characteristics and health/functional status, illness symptoms and satisfaction at two weeks post-discharge. There was only partial support for the modified MOS framework which served as the conceptual framework for this study. The findings suggest that discharge planning indicators, illness-related variables and patient characteristics depict minimal relationships with each of the

outcome variables. The strongest predictors of physical and mental health were the covariates of mental and physical health, respectively. The strongest predictors of current functional status were previous functional status scores. The finding that a portion of the variance in health and functional status was not explained by the adapted MOS framework, suggests that other factors must be considered.

CHAPTER 6

Limitations and Implications

In this chapter the limitations of the current study will be discussed. Implications for social work practice, education and research will also be presented.

Limitations

The use of a non-probability sample from acute care facilities located in one region limits the generalizability of study findings. An additional limiting factor was the reliance on patients' assessments of their own health. Although such reports have been shown to be good indicators, it is also useful to have independent assessments of health status. Case mix grouping (CMG) data were not available at the time of analysis. Discharge diagnoses were abstracted from patients' medical records, and there may have been a level of imprecision and variability in the way physicians designated diagnoses. CMG's will provide further assistance in the interpretations of the current study's findings in the context of the larger study.

Another limitation of this study was the use of single item questions to investigate the discharge planning process. This may have decreased the validity of these findings. A further limitation was that a few rating scales had

to collapsed into dichotomous categories for the purpose of statistical analysis (i.e., due to the low numbers of responses for certain categories). This may have contributed to a loss of richness in interpreting the findings. The use of a four week recall period to measure health status may also decrease the validity of the findings, especially for older patients who may have memory retention problems.

Another limitation was the low number of study participants who were referred for social work intervention. This resulted in a low number of social workers who were asked to complete health provider questionnaires. A final limitation was the low responses from physicians to the health provider questionnaires regarding specific patients in comparison to the number of nurses who completed the questionnaires. It is important to obtain provider information from all health care providers when conducting research of this nature.

Implications

The findings from this study have important implications for social work practice, education and research. Each of these components will be addressed separately in the discussion that follows.

Social Work Practice

There are new challenges and meanings for the practice of social work in the current health care environment. With constant changes in knowledge and technology and the reshaping of health care systems in response to the realities of cost containment, social workers must continue to improve health care services to patients and families. In order to do this, social workers need to demonstrate current knowledge and skills, and have a full awareness of their values, in order to effectively deal with the many challenges inherent in health care social work practice.

Study findings point to a need for additional social work services in restructured health care environments. Study participants commented on the limited number of available nursing staff as well as the time constraints placed on nurses in the hospital. Involving more social workers in discharge planning with this patient population would complement the work of staff nurses.

Only a small number of study participants received social work services during hospitalization. This raise questions about whether there are enough social work resources available in acute care settings to provide the services needed to ensure comprehensive hospital and post-discharge care. Perhaps social work services in acute care settings are provided only to patients

discharged to alternative levels of care (i.e., nursing homes, personal care settings). With the current shift to community-based care, social workers must also be attentive to patients discharged to the community, in order to ensure adequate follow-up care, and engage in appropriate interventions to prevent re-hospitalization.

The elderly remain a population at high risk for poor health care outcomes. The need for comprehensive discharge planning, particularly with the elderly, will become more important with shorter hospital stays. A full psychosocial assessment of patients' and their family supports will be required in order to implement early discharge to the community. Social workers can contribute to the interdisciplinary team by providing comprehensive psychosocial assessments which will contribute to improved health outcomes.

Early discharge from hospital may prevent patients from realizing the nature and extent of the potential problems they may face during recovery at home. Therefore, discharge planning should receive priority by social workers who can identify the knowledge and health care needs of patients that may arise following discharge.

This study identified relationships between socio-demographic characteristics and health outcomes. Social workers in health settings need to

have current knowledge in the field of aging, in order to identify important risk factors (i.e., age, gender) for poor health outcomes. Social workers need to have knowledge and skills to identify and intervene with patients at highest risk (i.e., those who are poor, homeless, marginalized, live alone, or have limited social support).

Study findings indicated that mental health was a significant predictor of physical health. This finding points to the importance of psychosocial factors in patients' health status. Social work practitioners need to assess and provide intervention to patients in psychological distress, and assist other interdisciplinary team members to understand and deal with the impact of psychosocial factors on illness and recovery.

Previous functional status was also a significant predictor of functional ability during the post-discharge period. An important role for social workers is to provide comprehensive functional assessments on patients who are admitted to hospital in order to identify those at highest risk for poor outcomes during the recovery period.

Of particular concern in this study was the number of patients who did not receive information on care after discharge (e.g., when or where to seek help). Patient education must begin at admission, if not earlier, and continue

education level of many of the study's participants points to the importance of literacy as an important factor in developing information-giving interventions. Educational interventions need to focus on ease of understanding because patients receiving the information will still be in the recovery phase of illness. It is important for social workers to ensure that patients understand the information being communicated because, regardless of what they are told, if patients do not remember being given certain information, then the communication failed. Verbal information, reinforced by clearly written information and use of video technology will enhance current patient education methods.

Suitable and realistic patient teaching methods are needed to encourage patient participation in decision-making about care and treatment. Information empowers patients to become active participants in their own care. As health environments continue to restructure and hospital stays are shortened, social workers have a responsibility to empower patients with the information they need to negotiate the health care system and to receive optimal care. Social work practitioners, by virtue of the nature and requirements of their profession, can confidently assume active roles to ensure that patients know their rights in the health care environment and that their voices are heard.

As this study pointed out, patients are often provided with little advance notice of discharge. This leaves less time to ensure that adequate discharge arrangements are made to reduce risks that may occur during recovery at home. Social workers strategically placed in emergency departments, pre-admission clinics, outpatient clinics, and other community settings could begin the process of patient education early in the continuum of care and help prepare patients to become more involved in decision-making when they are hospitalized.

Clear, effective, and timely communication with patients and families is critical in order for information to be conveyed regarding recovery at home. Health-care providers in this study over-estimated the nature and amount of information received by patients during discharge planning. These differences in perception raise important issues concerning communication during the discharge planning process. Measures must be taken to reduce the information gap between patients and providers. Study findings point emphasize the need for collaboration among team members to ensure that patients' informational needs are met during the hospital period. The fast pace of hospital care with limited time for discharge planning, indicates that better collaboration in discharge planning and patient education must be a

priority among social workers, nurses, and other members of the interdisciplinary team.

Study findings point to opportunities for social workers to become proactive, visible, involved and informed in the new health care environment. The need for interdisciplinary models of care is emphasized, and social workers can show a leadership role in interdisciplinary team-building within health care settings.

Study findings raise important issues for health and social policy. Social workers have a role in raising public awareness regarding the changes in health care delivery, and they have the knowledge and skills to encourage individuals and families to be as involved as possible in the development and evaluation of health care. Social workers also need to heighten the awareness of health care decision-makers, to ensure that a patient-centered mission is fulfilled in the health system, and that a shifting of resources from institution to community does not create an "either or" scenario (i.e., either hospital services or community health services). Social workers must influence social policy reform towards a more comprehensive system of health and social services that will better meet the needs of individuals, families and communities.

Social Work Education

Concerns about the adequacy of traditional social work education are amplified as a result of the dramatic changes in health care. As patients increasingly seek more active participation in health care decisions, as health care choices become more complex, and the incidence of socially linked diseases continues to intensify pressure on the health system, social work education must prepare students and practitioners to meet these challenges.

In order to assist patients with their health needs, social workers must have a thorough understanding of their own role, and the roles of other professionals in the new health care environment. The increasing proportion of elderly in the population emphasizes a need for the social work curriculum to include courses on aging and gerontology. Social work students need to be cognizant of the multiple factors influencing the health of older persons, particularly those from marginalized groups. Social work curricula must expand to include, at a minimum, information about primary health care, the social determinants of health, population health, individual and societal expectations of health care delivery systems, the impact of social, cultural, economic, regulatory and political factors on health, and complex ethical care issues.

Education for health care practice must be a collaborative process between academic and practice environments. Social work educational programs must continue to ensure that social work students are provided with opportunities to work with older adults and their families in institutional and community health settings. This will help them develop competencies in assessing the impact of psychosocial factors on health and to become advocates for older adults and their families within complex health systems.

Throughout their education, social work students must learn the importance of forging collaborative relationships with professional and non-professional groups in the health care sector. Through the offering of interdisciplinary courses, educators can help students develop a broad knowledge base, and a thorough understanding of inter-disciplinary team practice.

Conceptual frameworks from which to view the complexity of health care, such as the framework used in this study, need to be incorporated into the social work curriculum. There is much to be understood in the area of health care outcomes and the teaching of evidence-based practice must be incorporated throughout social work programs at the undergraduate and graduate levels of education.

Social Work Research

Study findings indicate many implications for social work research. The health and functional status measures chosen for this study are valuable in that they not only measure patient outcomes, but they can also be broadly applied to establish, compare and track baseline descriptions of illnesses and conditions of various patient groups. These measures can be used to screen patients most in need of care and can be used to set realistic treatment goals with patients, and monitor the results of interventions. The data from this study can serve as a basis for comparisons within regional and national health care systems. In order to re-assess patients' hospital and recovery experiences in the changing health care environment, a replication of this study in two to three years is recommended.

Although there has been extensive research on discharge planning, few studies have explored the influence of discharge planning on health care outcomes. Future studies of patients and providers should include a strong qualitative research component to explore the indicators of discharge planning (i.e., participation, understanding), in greater depth. Other variables to explore include the relationship between patients' confidence and their health and functional status at baseline and at two weeks post-discharge. The insights provided by this research will be useful in identifying the strengths and

limitations of current practice and may suggest new approaches and interventions. Comprehensive research on communication strategies used by health-care providers is required so that improvements can be made to ensure that patients are receiving information and that positive health outcomes for patients are realized. Additional research into the nature and extent of post-discharge problems is also needed in order to develop new and innovative discharge planning systems.

Social workers need to initiate, encourage, and collaborate in inter-disciplinary research, particularly patient-based outcomes research. Social workers have a responsibility to continually evaluate the impact of changes occurring in health care and initiate outcome studies to ensure that patients voices are included as health care systems strive to become more efficient and effective.

Summary

The results of this study suggest that patients' health outcomes are influenced by their previous physical and mental health status. Patient characteristics such as age and gender also influenced health and functional status during recovery. Although the findings from this study cannot be generalized, they generate knowledge which can be incorporated into social work practice, education and research.

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APPENDICIES

Appendix A

Letter of Approval from Human Investigation Committee

Memorial
University of Newfoundland

Human Investigation Committee
Research and Graduate Studies
Faculty of Medicine
The Health Sciences Centre

3 February, 1998

Reference #97.216

Dr. W. Rowe
c/o Janet Fitzpatrick
School of Social Work
M.U.N.

Dear Dr. Rowe:

This will acknowledge receipt of your correspondence dated January 21, 1998, wherein you provide a revised consent form for the research application entitled **"The Hospitalization Experience and Follow-up of Patients Aged 55 and Over: Patient Based Outcomes Monitoring".**

At a meeting held on January 29, 1998, the Human Investigation Committee granted full approval of your research study.

We take this opportunity to wish you every success with your research study.

Sincerely,

H.B. Younghusband, PhD
Chairman
Human Investigation Committee

HBY\pc

cc: Dr. K.M.W. Keough, Vice-President (Research)
Dr. E. Parsons, Vice-President, Medical Services, HCC

Appendix B

Consent Form

Consent to Participate in Research

I,_____,
have read and understood the demands of this project. I volunteer to participate in the **"The Hospital Experience and Follow-up of Patients Aged 55 and Over: Patient-Based Outcomes Monitoring"** for a period of two weeks after my return home from hospital. I realize that there is no financial benefit to participating in this study, nor will there be any changes in the health services I receive, now or in the future. I will benefit only in that my participation has the potential to improve the delivery of health care for all patients in the future.

I agree to a face to face interview with a research assistant during my hospital stay. Further, I agree to two telephone interviews; the first three days after my return home, and the second two weeks after my return home. I know that I can leave the study at any of these times with no fear of loss of benefits or changes in my health related services, now or at any time in the future.

I also agree to give a close family member or other significant person whom I have named, permission to answer a questionnaire about my hospitalization and return home. I give the researchers access to my medical records at General Hospital.

I know that the researchers will not ask me to undergo any physical tests or cause any emotional stress. I am aware that members of the research team have sworn an oath of confidentiality and cannot divulge or reveal any information about me without my specific written permission.

I have received the accompanying information pamphlet and understand that it is part of this consent form.

I hereby certify that I am completing this form, voluntarily, with no external pressure and fully informed. In witness of this fact, I have signed this form this ____ day of _____19___.

_____	_____	_____
PARTICIPANT'S SIGNATURE	**PRINT NAME**	**DATE**
_____	_____	_____
RESEARCH ASSISTANT/WITNESS'S SIGNATURE	**PRINT NAME**	**DATE**

If you wish any additional information about this project or your rights as a study participant you can contact **Janet Fitzpatrick** at **(709) 737-7940.** For questions about the study itself you can also call the principle investigator, **Professor William Rowe** at **(709) 737-7940.**

Appendix C

SF-12 Health Status Survey

SF-12 HEALTH SURVEY (STANDARD)

INSTRUCTIONS: This questionnaire asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

Please answer every question by marking one box. If you are unsure about how to answer, please give the best answer you can.

1. In general, would you say your health is:

☐	☐	☐	☐	☐
Excellent	Very good	Good	Fair	Poor

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

	Yes, Limited A Lot	Yes, Limited A Little	No, Not Limited At All
2. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	☐	☐	☐
3. Climbing **several** flights of stairs	☐	☐	☐

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

	YES	NO
4. **Accomplished less** than you would like	☐	☐
5. Were limited in the **kind** of work or other activities	☐	☐

During the past 4 weeks, have you had any of the following problems with your work or other regular dail activities as a result of any emotional problems (such as feeling depressed or anxious)?

	YES	NO
6. Accomplished less than you would like	☐	☐
7. Didn't do work or other activities as carefully as usual	☐	☐

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

☐ Not at all ☐ A little bit ☐ Moderately ☐ Quite a bit ☐ Extremely

These questions are about how you feel and how things have been with you during the past 4 weeks. Fo each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks -

	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
9. Have you felt calm and peaceful?	☐	☐	☐	☐	☐	☐
10. Did you have a lot of energy?	☐	☐	☐	☐	☐	☐
11. Have you felt downhearted and blue?	☐	☐	☐	☐	☐	☐

12. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

☐ All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time

Appendix D

Patient Information Questionnaire

Patient Information Questionnaire

1.1. Do you expect your health to: [Select only one]

stay the same?	get better?	Get worse?
1	2	3

1.2. What is your current status?:

1. Married
2. Common Law/Living with a partner
3. Widowed
4. Divorced
5. Separated
6. Single/Never Married
7. Other _____
8. Does not want to answer

[If married, common law or partner, ask:]

1.3. How would you describe your spouse's/partner's general health?

Excellent	Very good	Good	Fair	Poor
1	2	3	4	5

2. What language do you yourself speak most often at home?

English	French	Other _____
1	2	3

3. What country were you born in?: _____

[If born outside of Canada, ask --]

4. How many years have you been in Canada? _____

5. What level of education have you completed?

1. none
2. public/grade school
3. high school
4. community/technical college
5. bachelor degree
6. post-grad/professional

6. Do you live in a:

1. House
2. Apartment
3. Rooming House
4. Other (specify)_____

7.1. Is there anyone at home that you can turn to for help? Yes 1 No 2

7.2 *[If yes]* Who? (Circle)

1. spouse/partner
2. children
3. other family members
4. friends
5. neighbour
6. other (specify)_____

8. Do you have children? No 0 ☐Yes, how many? [living only] _____

[If yes,] please state the age, gender, and city in which your children live?

Age		Male / Female		Lives where 1-St. John's, 2- near St. John's, 3-elsewhere in Nfld, 4-Outside Nfld,				
(20.11)_____	(20.12)	1	2	(20.13)	1	2	3	4
(20.21)_____	(20.22)	1	2	(20.23)	1	2	3	4
(20.31)_____	(20.32)	1	2	(20.33)	1	2	3	4
(20.41)_____	(20.42)	1	2	(20.43)	1	2	3	4
(20.51)_____	(20.52)	1	2	(20.53)	1	2	3	4
(20.61)_____	(20.62)	1	2	(20.63)	1	2	3	4
(20.71)_____	(20.72)	1	2	(20.73)	1	2	3	4
(20.81)_____	(20.82)	1	2	(20.83)	1	2	3	4

9. Who do you live with:

Alone	Spouse/ Partner	Children	Other Family Members	Friends	Other _____ (Specify)
1	2	3	4	5	6

10. Do you have pets? **Yes** 1 **No** 2

11. If yes, what kind? [Please mark all that apply]

Cat	Dog	Bird	Other_____
1	2	3	4

12. What is your main daily activity? [Please mark all that apply]

		Yes	No
23.1	Full time employment	1	2
23.2	Part time employment	1	2
23.3	Looking for work	1	2
23.4	Homemaker	1	2
23.5	Volunteer	1	2
23.6	Student	1	2
23.7	Retired	1	2
23.8	Other (Specify) _____		

[If yes to questions 23.1, 23.2, or 23.3 --- ask]

12.1 What is your line of work? _____

[If says <u>retired</u> --ask]

12.2 What <u>was</u> your line of work? _____

13. What are <u>your</u> major sources of income?: [Mark all that apply]

		Yes	No
24.1	Employment	1	2
24.2	Private retirement pension	1	2
24.3	Government pensions	1	2
24.4	Income supplement	1	2
24.5.	Investments	1	2
24.6	Other sources (specify) _____		
24.7	Does not know /Does not want to answer	1	2

14. We are aware that incomes are confidential. It would be helpful to us for statistical purposes only to have an estimate of your total annual household income (everyone in your household) before taxes. Into which of these five categories does that income fit? [Provide subject with list of choices]

1. Less than $10,000
2. $10,000 - $14,999
3. $15,000 - $24,999
4. $25,000 - $49,999
5. $50,000 or more
6. Does not know / Does not want to answer

15. How long did you wait in the hospital before arriving at your room [includes E.R.]?

_____ [# of hours]

16. As you recall, part of this research includes asking a primary family member or other person significant to you to fill out a questionnaire about your hospitalization and your return home.

Could you please give me the name of this person as well as the phone number where we could reach him/her?

Name:_____ *Thank you.*

What is their relationship to you?_____

At what phone # can they be reached? _____-_____

Is there another telephone number where he/she can be reached _____

*Thank you. Could you please give this questionnaire to Mr./Mrs.*_____
All the instructions are included.

Thank you very much for your time.

As we agreed I will telephone you twice after your return home from hospital. The first time will be three days after your return home. I will phone you again about 10 days after that. As your continued participation is very valuable, I will give you this card to keep as a reminder of when I will telephone you. Is there a time that I should not call you?

Thank you again - goodbye.

Observation:

Other Information Regarding the Subject

Surname _____

Given Name _____

Maiden / Mother Name _____

Medical Chart Number _____

Unit Number _____

Home Phone _____

31. Residence Code _____

32. Admission Date _____

33. Discharge Date _____ / _____ / _____
Day Month Year

34. Date of Birth _____ / _____ / _____
Day Month Year

35. P.I. Booklet? _____

36. Admission Status _____

37. Admission From _____

38. Diagnosis and Surgical Procedures _____

_____

_____

Appendix E

Post-Hospital Questionnaire

Post Hospital Questionnaire

Identification No. _____ Research Assistant: _____

Medical Chart No. _____

*Hello, may I speak with Mr./Mrs.*_____ [patient's name]

{if subject is not available then ask when a good time would be for you to call back and record this on your phone schedule}

Hello _____ [patient's name], *this is* _____ [your name], *Research Assistant at the hospital. It's been a few days since we last spoke. Is this a good time for your second interview? Thank you very much again for your participation in this study called "The Hospital Experience and Follow-up of Patients Aged 55 and Over." I would like to remind you that you may withdraw from the study at anytime, but by continuing to answer questions now you are expressing your agreement to participate. The first part of this telephone interview is about your hospitalization. The second part will include questions about physical symptoms and how you manage your day-to-day activities.*

This interview should not take more than twenty minutes. Can we begin now? Thank you.

Date: _____/_____/_____ Start Time_____ A.M./ P.M.
Day Month Year

End Time _____ A.M./ P.M.

Please answer every question in this questionnaire

Thank you -- now the first part of our interview is about your hospitalization and the plans that were made for your return home. In addition to providing me with your answers - please feel free to explain or comment at any time. Your comments are extremely valuable.

1. Before we begin this section, please tell me when you returned home from the hospital. _____ / _____ / _____

2.1 Before your hospitalization were you getting any help at home?

Yes 1
No 2

2.2 If yes, from whom?

Nurse 1
Doctor 2
Homemaker 3
Other _____ 4

2.3 Was the Community Health Board (CHB) or Other community service involved

Yes 1
No 2

2.4 If yes, which one?

CHB 1
Community Agency 2
Private Agency 3
Other 4
Specify_____

Legend: 1. None at all 2. A Little 3. A Lor

3.1 While in hospital, how much of an understanding did you have of the health problem that brought you to hospital? 1 2 3

3.2 Would you care to comment: _____

_____

4.1 While in hospital, how much of an understanding did you have of <u>why</u> you were having tests? 1 2 3

4.2 Would you care to comment: _____

_____

5.1 During your hospitalization, to what extent did you participate in decision-making about your care? 1 2 3

5.2 Would you care to comment: _____

_____

6. **While in hospital patients can be visited by a number of different health professionals – I'm going to read a list to you. Please indicate by a yes or a no whether you were visited by them.**

	Yes	No	Do not know
6.1 Nurse	1	2	3
6.2 Social Worker	1	2	3
6.3 Physiotherapist	1	2	3
6.4 Dietician	1	2	3
6.5 Occupational Therapist	1	2	3
6.6 Speech Therapist	1	2	3
6.7 Family/regular doctor	1	2	3
6.8 Hospital Physician	1	2	3
6.9 Chaplaincy	1	2	3
6.10 Other (specify)	☐	_____	

7.1 **While in hospital, were there any health professionals that you would have liked to have more contact with?** Yes 1 No 2

7.2 Would you care to comment: _____

_____

8.1 **While in hospital were you consulted by hospital personnel about what arrangements you considered necessary for your return home?** Yes 1 No 2

8.2 Would you care to comment: _____

_____

8.3 **At what point during your stay in hospital did someone visit you to discuss your return home (discharge plan)?**

1 Soon after being admitted
2 Midway during hospitalization
3 Just before discharge
4 On the day of discharge

8.4 Would you care to comment: _____

_____

9. **Sometimes when people leave the hospital they may need help from health professionals in the community. Were you told in the hospital that you would require the use of any of the following?**

	Yes	No	From...		Community Health Board	Private Agency	Other Agency[specify]
(9.11)	1	2	Visiting Nurse	(9.12)	1	2	3_____
(9.21)	1	2	Homemaker	(9.22)	1	2	3_____
(9.31)	1	2	Visiting Doctor	(9.32)	1	2	3_____

(9.41)	1	2	Physiotherapist	(9.42)	1	2	3_____
(9.51)	1	2	Occupational Therapist	(9.52)	1	2	3_____
(9.61)	1	2	Social Worker	(9.62)	1	2	3_____
(9.71)	1	2	Laboratory Technician	(9.72)	1	2	3_____
(9.81)	1	2	Other (specify) _____	(9.82)	1	2	3_____

9.2 Who made the arrangements for you to receive help and services that you required?

_____

10.1 If it was determined that you needed additional services for care outside of the hospital, were you provided with information about where to obtain those services? Yes 1 No 2

10.2 [*If yes*], **from whom?**

Nurse 1
Doctor 2
Social worker 3
Other(specify)_____

11.1 How satisfied were you with the arrangements made for your return home?

1 Not at all satisfied
2 Satisfied a little
3 Very satisfied
4 Not necessary

11.2 Would you care to comment: _____

_____

11.3 While you were in hospital, did you receive information about available community-based health care services and providers?

Yes 1
No 2
Does not apply 3

11.4 [If yes], who provided information?

Nurse 1
Doctor 2
Social Worker 3
Other (specify)_____

12.1 While in hospital were you provided with information about medication you were already taking?

Yes 1
No 2
Does not apply 3

12.2 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify)_____

13.1 **Were you provided with information about <u>new medication</u> that was prescribed to you? For example, were you provided with instructions about how and when to take it?**

Yes 1
No 2
Does not apply 3

13.2 **Were you provided with information about its side effects?**

Yes 1
No 2
Does not apply 3

13.3 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify) _____

14.1 **Did you receive any information about <u>lifestyle changes</u> that would be necessary (such as diet, work, exercise or sexual activity)?**

Yes 1
No 2
Does not apply 3

14.2 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify) _____

15.1 **Were you given any information about what to expect during your recovery at home?**

Yes 1
No 2
Does not apply 3

15.2 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify) _____

16.1 **While in hospital were you provided information about <u>when</u> to seek help if necessary?**

Yes 1
No 2
Does not apply 3

16.2 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify) _____

17.1 **While in hospital were you provided information about <u>where</u> to seek help if necessary?**

Yes 1
No 2
Does not apply 3

17.2 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify) _____

18.1 **Were you provided with any additional information that you found particularly useful?**

Yes 1
No 2
Does not apply 3

18.2 [*If Yes*], **who provided information?**

Nurse 1
Doctor 2
Social Worker 3
Other (specify) _____

18.3 Please describe the information_____

_____

18.4 Were you encouraged to be as independent as possible during your hospital stay? *For example, were you taught to do procedures that were required following your return home such as dressing changes, injections or medications?*

Yes 1
No 2
Does not apply 3

18.5 Were you provided with supplies by the hospital (i.e. dressings, catheters, ointments) that you would need following your return home?

Yes 1
No 2
Does not apply 3

18.6 *[if Yes],* **who provided the supplies?**

Nurse 1
Doctor 2
Other (specify) _____
Don't Know 4

18.7 Were you expected to purchase supplies on your own?

Yes 1
No 2
Does not apply 3

19.1 Upon leaving the hospital, how confident were you in your ability to resume your usual daily functions and activities?

1 Very confident
2 A little confident
3 Not confident

19.2 Would you care to comment: _____

_____

20. Do you think that you were discharged from hospital too soon?

Yes 1
No 2
Do not know 3

Why? _____

_____

21. During your recovery following your hospitalization did you go and stay with someone else — a friend or family member? Yes 1 No 2

22. If yes, who did you stay with?_____

23. For how many days?_____

24. Since your discharge from hospital were you expected to pay for:

	yes	no	does not apply
a) services	1	2	3
b) medication	1	2	3
c) supplies	1	2	3

	yes	no	does not apply
25. Since your discharge from hospital were you expected to use your private insurance coverage?	1	2	3

26. Thank you very much. This concludes our second interview. Before we end, however, please make any additional comments you might have on health services in general.

_____

_____

28. Please comment on health services that you have received or would like to receive in the future.

_____

_____

We truly value your participation in this study. As you know I am scheduled to call you again in ten days. According to my calendar, then, I will be phoning you on _____. Could you please make a note of this date. Will I be able to reach you at the same phone number, and, is there a time that I should not call you?

Thank you very much Mr./Mrs. _____.

_____

Appendix F

Symptom Questionnaire

Symptom Questionnaire

1. *I will now list some physical symptoms. Please tell me whether you have experienced any of these symptoms during the past two days.*

	Yes	No	[*If yes*]	Yes	No
(1.1) **Shortness of breath** (e.g. climbing stairs)	1	2	(1.11) did you expect to have this symptom?	1	2
			(1.12) did you know what to do about it?	1	2
(1.2) **Pain** [where?] _____ [Muscle, chest, back, headache] a b c d	1	2	(1.21) did you expect to have this symptom?	1	2
			(1.22) did you know what to do about it?	1	2
(1.3) **Lightheaded while on feet**	1	2	(1.31) did you expect to have this symptom?	1	2
			(1.32) did you know what to do about it?	1	2
(1.4) **Tiredness/ Weakness** 1	2		(1.41) did you expect to have this symptom?	1	2
			(1.42) did you know what to do about it?	1	2
(1.5) **Nausea**	1	2	(1.51) did you expect to have this symptom?	1	2
			(1.52) did you know what to do about it?	1	2
(1.6) **Vomiting**	1	2	(1.61) did you expect to have this symptom?	1	2
			(1.62) did you know what to do about it?	1	2
(1.7) **Lack of appetite**	1	2	(1.71) did you expect to have this symptom?	1	2
			(1.72) did you know what to do about it?	1	2
(1.8) **Constipation**	1	2	(1.81) did you expect to have this symptom?	1	2
			(1.82) did you know what to do about it?	1	2
(1.9) **Diarrhea**	1	2	(1.91) did you expect to have this symptom?	1	2
			(1.92) did you know what to do about it?	1	2
(1.10) **Insomnia**	1	2	(1.101) did you expect to have this symptom?	1	2
			(1.102) did you know what to do about it?	1	2

Appendix G

The Functional Autonomy Measurement System

Functional Autonomy Measurement System

The next set of questions are about how people manage their current daily activities and physical health

HOW MANAGING NOW

[Legend for Stability of the resource]

***In two weeks** the resource will:*

1 – lessen 2 – increase 3 – remain stable

Disability	Resource		Stability lessen	increase	remain stable
A. Activities of Daily Living (ADL)					
SA1. EATING 1. Feeds self independently 2. with difficulty 3. Feeds self but needs stimulation or supervision OR food must be prepared or cut 4. Needs some help to eat OR dishes must be presented one after another 5. Must be fed by another person OR has naso-gastro tube OR a gastronomy	**SA1.**	1. Subject himself/herself	1	2	3
		2. Spouse/partner	1	2	3
		3. Children	1	2	3
		4. Brother/Sister	1	2	3
		5. Other family members	1	2	3
		6. Neighbour	1	2	3
		7. Friend	1	2	3
		8. Aides/Homemaker	1	2	3
		9. Nurse	1	2	3
		10. Volunteer	1	2	3
		11. Employee	1	2	3
		12. Other	1	2	3
SA2. WASHING 1. Washes self independently 2. with difficulty 3. Washes self but needs cueing OR needs supervision OR needs preparation OR needs help for the complete weekly bath 4. Needs help for the daily wash but participates actively 5. Must be washed by another person	**SA2.**	1. Subject himself/herself	1	2	3
		2. Spouse/partner	1	2	3
		3. Children	1	2	3
		4. Brother/Sister	1	2	3
		5. Other family members	1	2	3
		6. Neighbour	1	2	3
		7. Friend	1	2	3
		8. Aides/Homemaker	1	2	3
		9. Nurse	1	2	3
		10. Volunteer	1	2	3
		11. Employee	1	2	3
		12. Other	1	2	3

SA3. DRESSING 1. Dresses self independently 2. with difficulty 3. Dresses self but needs cueing OR needs supervision OR clothing must be readied and presented OR needs help with finishing touches only (buttons, laces) 4. Needs help dressing 5. Must be dressed by another person	**SA3.** 1. Subject hims-elf/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3

1 – lessen 2 – increase 3 – remain stable

SA4. GROOMING (Brushes teeth, combs hair, shaves, trims finger and toenails) 1. Grooms self independently 2. with difficulty 3. Grooms self but needs cueing or supervision 4. Needs help for grooming 5. Must be groomed by another person	**SA4.** 1. Subject hims-elf/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SA5. URINARY FUNCTION 1. Normal voiding 2. Occasional incontinence OR dribbling OR needs cueing to avoid incontinence 3. Frequent urinary incontinence 4. Complete unrinary incontinence OR wears a diaper OR an indwelling catheter OR a urinary condom	**SA5.** 1. Subject hims-elf/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3

SA6. BOWEL FUNCTION 1. Normal bowel function 2. Occasional incontinence OR needs cleansing enema occasionally 3. Frequent incontinence OR needs cleansing enema frequently 4. Always incontinent OR wears a diaper OR an ostomy	**SA6.**	1. Subject himself/herself	1	2	3
		2. Spouse/partner	1	2	3
		3. Children	1	2	3
		4. Brother/Sister	1	2	3
		5. Other family members	1	2	3
		6. Neighbour	1	2	3
		7. Friend	1	2	3
		8. Aides/Homemaker	1	2	3
		9. Nurse	1	2	3
		10. Volunteer	1	2	3
		11. Employee	1	2	3
		12. Other	1	2	3
SA7. TOILETTING 1. Toilets self (including getting on/off toilet, managing perineal care and clothing) 2. With difficulty 3. Needs supervision for toiletting OR uses commode, bedpan or urinal 4. Needs help using the toilet, commode, bedpan or urinal 5. Does not use toilet, commode, bedpan or urinal	**SA7.**	1. Subject himself/herself	1	2	3
		2. Spouse/partner	1	2	3
		3. Children	1	2	3
		4. Brother/Sister	1	2	3
		5. Other family members	1	2	3
		6. Neighbour	1	2	3
		7. Friend	1	2	3
		8. Aides/Homemaker	1	2	3
		9. Nurse	1	2	3
		10. Volunteer	1	2	3
		11. Employee	1	2	3
		12. Other	1	2	3

1 – lessen 2 – increase 3 – remain stable

B. Mobility					
SB1. TRANSFERS (bed to chair or wheelchair and vice versa) 1. Gets in and out of bed alone 2. With difficulty 3. Needs supervision to get in and out of bed OR cueing OR guidance 4. Needs help to get in and out of bed/chair 5. Bedridden (must be lifted in and out of bed)	**SB1.**	1. Subject himself/herself	1	2	3
		2. Spouse/partner	1	2	3
		3. Children	1	2	3
		4. Brother/Sister	1	2	3
		5. Other family members	1	2	3
		6. Neighbour	1	2	3
		7. Friend	1	2	3
		8. Aides/Homemaker	1	2	3
		9. Nurse	1	2	3
		10. Volunteer	1	2	3
		11. Employee	1	2	3
		12. Other	1	2	3
SB2. WALKING INSIDE 1. Walks independently (with or without cane, prosthesis or orthosis) 2. With difficulty 3. Walks inside independently but needs guidance, cueing, or supervision in certain circumstances OR unsafe gait OR uses a walker 4. Needs help of another person to walk 5. Does not walk	**SB2.**	1. Subject himself/herself	1	2	3
		2. Spouse/partner	1	2	3
		3. Children	1	2	3
		4. Brother/Sister	1	2	3
		5. Other family members	1	2	3
		6. Neighbour	1	2	3
		7. Friend	1	2	3
		8. Aides/Homemaker	1	2	3
		9. Nurse	1	2	3
		10. Volunteer	1	2	3
		11. Employee	1	2	3
		12. Other	1	2	3

SB3. WALKING OUTSIDE

1. Walks independently (with or without cane, prosthesis or orthosis)
2. With difficulty
3. Walks outside independently but needs guidance, cueing, or supervision in certain circumstances OR unsafe gait OR uses a walker
4. Needs help of another person to walk
5. Does not walk

SB3.				
	1. Subject himself/herself	1	2	3
	2. Spouse/partner	1	2	3
	3. Children	1	2	3
	4. Brother/Sister	1	2	3
	5. Other family members	1	2	3
	6. Neighbour	1	2	3
	7. Friend	1	2	3
	8. Aides/Homemaker	1	2	3
	9. Nurse	1	2	3
	10. Volunteer	1	2	3
	11. Employee	1	2	3
	12. Other	1	2	3

SB4. DONNING PROSTHESIS OR ORTHOSIS

1. Does not wear prosthesis or orthosis
2. Dons prosthesis or orthosis independently
3. With difficulty
4. Donning of prosthesis or orthosis needs checking
5. Prosthesis or orthosis must be put on by another person

SB4.				
	1. Subject himself/herself	1	2	3
	2. Spouse/partner	1	2	3
	3. Children	1	2	3
	4. Brother/Sister	1	2	3
	5. Other family members	1	2	3
	6. Neighbour	1	2	3
	7. Friend	1	2	3
	8. Aides/Homemaker	1	2	3
	9. Nurse	1	2	3
	10. Volunteer	1	2	3
	11. Employee	1	2	3
	12. Other	1	2	3

1 -- lessen 2 -- increase 3 -- remain stable

SB5. PROPELLING A WHEELCHAIR (W/C)

1. Does not need a wheelchair
2. Propels wheelchair independently
3. With difficulty
4. Needs to have wheelchair pushed
5. Unable to use wheelchair (must be transported on stretcher)

Does the subject's actual residence allow for:

W/C accessibility	W/C mobility
1 Yes 2 No	1 Yes 2 No

Does the subject presently have the resources (help or supervision) necessary overcome this disability?

0 No

if Yes

SB5.				
	1. Subject himself/herself	1	2	3
	2. Spouse/partner	1	2	3
	3. Children	1	2	3
	4. Brother/Sister	1	2	3
	5. Other family members	1	2	3
	6. Neighbour	1	2	3
	7. Friend	1	2	3
	8. Aides/Homemaker	1	2	3
	9. Nurse	1	2	3
	10. Volunteer	1	2	3
	11. Employee	1	2	3
	12. Other	1	2	3

SB6. NEGOTIATING STAIRS 1. Goes up and down stairs alone 2. With difficulty 3. Requires cueing, supervision or guidance to negotiate stairs 4. Needs help to go up and down stairs 5. Does not negotiate stairs	**SB6.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
C. Communication	
SC1. VISION 1. Sees adequately with or without corrective lenses 2. Visual problems but sees enough to do ADL's 3. Only sees outlines of objects and needs supervision in ADL's. 4. Blind	**SC1.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SC2. HEARING 1. Hears adequately with or without hearing aid 2. Hears if spoken to in a loud voice OR needs hearing aid put in by another person 3. Only hears shouting or certain words OR reads lips OR understands gestures 4. Deaf and unable to understand what is said to him/her	**SC2.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SC3. SPEAKING 1. Communicates verbally in prevailing language and is easily understood 2. Has a speech/language problem but able to express him/herself 3. Has a major speech/language problem but able to express basic needs OR answer simple questions 4. Unable to communicate verbally	**SC3.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3

E. Instrumental Activities of Daily Living	
SE1. HOUSEKEEPING 1. Does housekeeping alone 2. With difficulty 3. Does housekeeping but needs supervision to ensure cleanliness OR needs help for heavy housework (floors, windows) 4. Needs help for daily housework 5. Does not do housework	**SE1.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SE2. MEAL PREPARATION 1. Prepares own meals 2. With difficulty 3. Prepares meals but needs guidance to maintain adequate nutrition 4. Only prepares light meals OR heats up pre-prepared meals 5. Does not prepare meals	**SE2.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SE3. SHOPPING 1. Plans and does shopping independently (food, clothes) 2. With difficulty 3. Shops but needs delivery service 4. Needs help to plan or shop 5. Does not shop	**SE3.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SE4. LAUNDRY 1. Does laundry independently 2. With difficulty 3. Does laundry but needs guidance or stimulation to maintain standards of cleanliness 4. Needs help to do laundry 5. Does not do laundry	**SE4.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3

SE5. TELEPHONE 1. Uses the telephone (including use of directory) 2. With difficulty 3. Answers telephone but only dials a few memorized numbers or emergency numbers 4. Communicates by telephone but does not dial numbers or lift the receiver off the hook 5. Does not use the telephone	**SE5.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SE6. TRANSPORTATION 1. Able to use transportation alone (car, taxi, bus..) 2. With difficulty 3. Must be accompanied to use transportation OR uses an adapted vehicle 4. Uses car or adapted vehicle only if accompanied and has help getting in and out of the vehicle 5. Must be transported in an ambulance	**SE6.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SE7. MEDICATION USE 1. Takes medication according to prescription OR does not need medication 2. With difficulty 3. Needs weekly supervision to ensure compliance to prescription OR uses a medication dispenser aid 4. Takes medication if prepared daily 5. Must be given each dosage of medications (as prescribed	**SE7.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3
SE8. BUDGETING 1. Manages budgeting independently 2. With difficulty 3. Needs supervision for certain major transactions 4. Needs help for some regular transactions (cashing cheques, paying bills) 5. Does not manage budget	**SE8.** 1. Subject himself/herself 1 2 3 2. Spouse/partner 1 2 3 3. Children 1 2 3 4. Brother/Sister 1 2 3 5. Other family members 1 2 3 6. Neighbour 1 2 3 7. Friend 1 2 3 8. Aides/Homemaker 1 2 3 9. Nurse 1 2 3 10. Volunteer 1 2 3 11. Employee 1 2 3 12. Other 1 2 3

Appendix H

Health Provider Questionnaire

The Hospital Experience and Follow-up of
Patients Aged 55 and Over:
Patient-Based Outcomes Monitoring

HEALTH CARE PROVIDER--HOSPITAL QUESTIONNAIRE

You are asked to complete a questionnaire about:

Name of the Patient: _____
family name first name

Patient's birth date: _____/_____/_____
year month day

STAFF NURSE:

PLEASE COMPLETE ON DAY OF PATIENT'S DISCHARGE

COMPLETION TIME: 8 MINUTES

IMPORTANT

Please destroy this cover sheet
after you have completed the questionnaire

The Hospital Experience and Follow-up of Patients Aged 55 and Over: Patient-Based Outcomes Monitoring

Identification No. _____

Medical Chart No. _____

HEALTH CARE PROVIDER-HOSPITAL QUESTIONNAIRE

1. Today's date: ____/____/____
year month day

2. Your Position: (circle one)

Primary Nurse	1
Discharge Nurse	2
Pt. Coordinator/Charge nurse	3
Other Nurse	4
Attending Physician	5
House Staff	6
Social Worker	7
Occupational Therapist	8
Physiotherapist	9
Other_____ (specify)	10

3. Number of years in professional practice:

Less than 1 year	1
1 - 3 years	2
4 - 6 years	3
7 - 10 years	4
More than 10 years	5
More than 15 years	6

For the following questions please check the box that best reflects your response.

4. How much understanding do you think the patient had about the health problem that brought him/her to hospital? None at all 1 A little 2 A lot 3

5. How much understanding do you think the family/friend had about the health problem that brought the patient to hospital? None at all 1 A little 2 A lot 3 Does not apply 4

6. How much do you think the patient understood about why he/she was having tests?
None at all 1 A little 2 A lot 3 Does not apply 4

7. How much understanding do you think the family/friend had about why the patient was having tests?
None at all 1 A little 2 A lot 3 Does not apply 4

8. To what extent did the patient participate in decision-making about his/her treatment plan?
None at all 1 A little 2 A lot 3

9. To what extent did the patient's family/ friend participate in decision-making about the treatment plan?
None at all 1 A little 2 A lot 3 Does not apply 4

10. How much interaction did you have with the patient's family or close friends?
None at all 1 A little 2 A lot 3

leaving the hospital?

Very confident	A little confident	Not confident	Does not apply
1	2	3	4

12. How much confidence do you think the patient's family/friend had in their ability to continue patient care at home?

Very confident	A little confident	Not confident	Does not apply
1	2	3	4

13. Did you consult the patient about what arrangements he/she considered necessary for discharge?
Yes 1 No 2 Does not apply 3

14. Did you consult the family/friend about what arrangements they considered necessary for discharge?
Yes 1 No 2 Does not apply 3

15. Did you determine that the patient will need help once at home?
Yes 1 No 2 Does not apply 3

16. Did you refer the patient to community resources?
Yes 1 No 2 Does not apply 3

16. [If yes] , **please indicate which one(s) below**

From...		Community Health Board	Private Agency	Other Agency (specify)
16.21 Visiting Nurse	16.22	1	2	3 _____
16.31 Homemaker	16.32	1	2	3 _____
16.41 Visiting Doctor	16.42	1	2	3 _____
16.51 Physiotherapist	16.52	1	2	3 _____
16.61 Occupational Therapist	16.62	1	2	3 _____
16.71 Social Worker	16.72	1	2	3 _____
16.81 Laboratory Technologist	16.82	1	2	3 _____
16.91 Other (specify): _____	16.92	1	2	3 _____

17. Did you help the patient learn about the following? (Please check the appropriate response(s))

		Yes	No	Does not apply
17.1	Medications (already taking) how and when to take	1	2	3
17.2	New Medications how and when to take	1	2	3
17.3	Medication side effects	1	2	3
17.4	Lifestyle changes	1	2	3
17.5	Recovery at home	1	2	3
17.6	When to seek help	1	2	3
17.7	Where to seek help	1	2	3
17.8	Their physical symptoms	1	2	3
17.9	Other (specify) ☐ _____			

18. Briefly describe teaching method(s)used._____

_____

19. Did you help patient's family/friend learn about the following in relation to the patient:

		Yes	No	Does not apply
19.1	Medications (already taking) how and when to take	1	2	3
19.2	New Medications how and when to take	1	2	3
19.3	Medication side effects	1	2	3
19.4	Lifestyle changes	1	2	3
19.5	Recovery at home	1	2	3
19.6	When to seek help	1	2	3
19.7	Where to seek help	1	2	3
19.8	Their physical symptoms	1	2	3
19.9	Other (specify) ☐_____			

20. Briefly describe teaching method(s)used._____

_____

21. How satisfied do you think the patient is with the hospital discharge arrangements?

Not at all satisfied 1 A little satisfied 2 Very Satisfied 3

22. How satisfied do you think the patient's family member/friend is with the hospital discharge arrangements?

Not at all satisfied 1 A little satisfied 2 Very Satisfied 3 Does not apply 4

23. Will you follow up with the patient after his/her discharge from hospital?

Yes 1 No 2 Does not apply 3

24. Does the patient expect his/her health to: [select only one]

Stay the same? 1 Get better? 2 Get worse? 3 Does not apply 4

25. Do you assess patient status in the following categories when planning discharge?

		Yes	No	Does not apply
25.1	Medical status	1	2	3
25.2	Psychosocial status	1	2	3
25.3	Living arrangements, support network, coping skills	1	2	3
25.4	Functional status (activities of daily living)	1	2	3

26. Was the patient encouraged to be as independent as possible during his/her hospital stay? ***For example, was he/she taught to do procedures that were required following their return home such as dressing changes, injections or medications?***

Yes 1
No 2
Does not apply 3

27. Was the patient provided with supplies (Dressings, catheters, ointments) that they would need following his/her return home?

Yes 1
No 2
Does not apply 3

28. ***[if yes]*****, who provided the supplies?**

Nurse 1
Doctor 2
Other (specify) 3 _____
Don't Know 4

29. **Were they expected to purchase supplies on their own?**

Yes	1
No	2
Does not apply	3

30. **Could the patient have been discharged earlier?** yes 1 no 2 do not know 3

31. **If yes, was the delay in discharge related to inadequate or non-existent community-based services?** yes 1 no 2 do not know 3

Please specify - was the delay a result of - (circle any of the following)

1. **Frequent treatments required but no available services in the community to provide frequent treatments**
2. **Lack of rehabilitative services**
3. **Lack of funded IV Program**
4. **Type of service required** specify _____
5. **Complexity of treatment** specify _____
6. **No funding source for needed supplies, equipment etc.,** specify _____
7. **Other: Specify**_____

32. **Do you think that the patient was discharged from hospital too soon?**

Yes	1
No	2
Does not apply	3

Why? _____

_____

33. **This section is for any comments you may have.**_____

_____

_____

_____

_____

_____

****

Thank you very much for taking the time to complete this questionnaire.

Place completed questionnaire in the envelope provided and give <u>sealed</u> envelope to ward clerk. Thank you.